

6TH FLOOR OFFICE RENOVATION ARLINGTON HIGH SCHOOL

869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476

MARCH 27, 2011

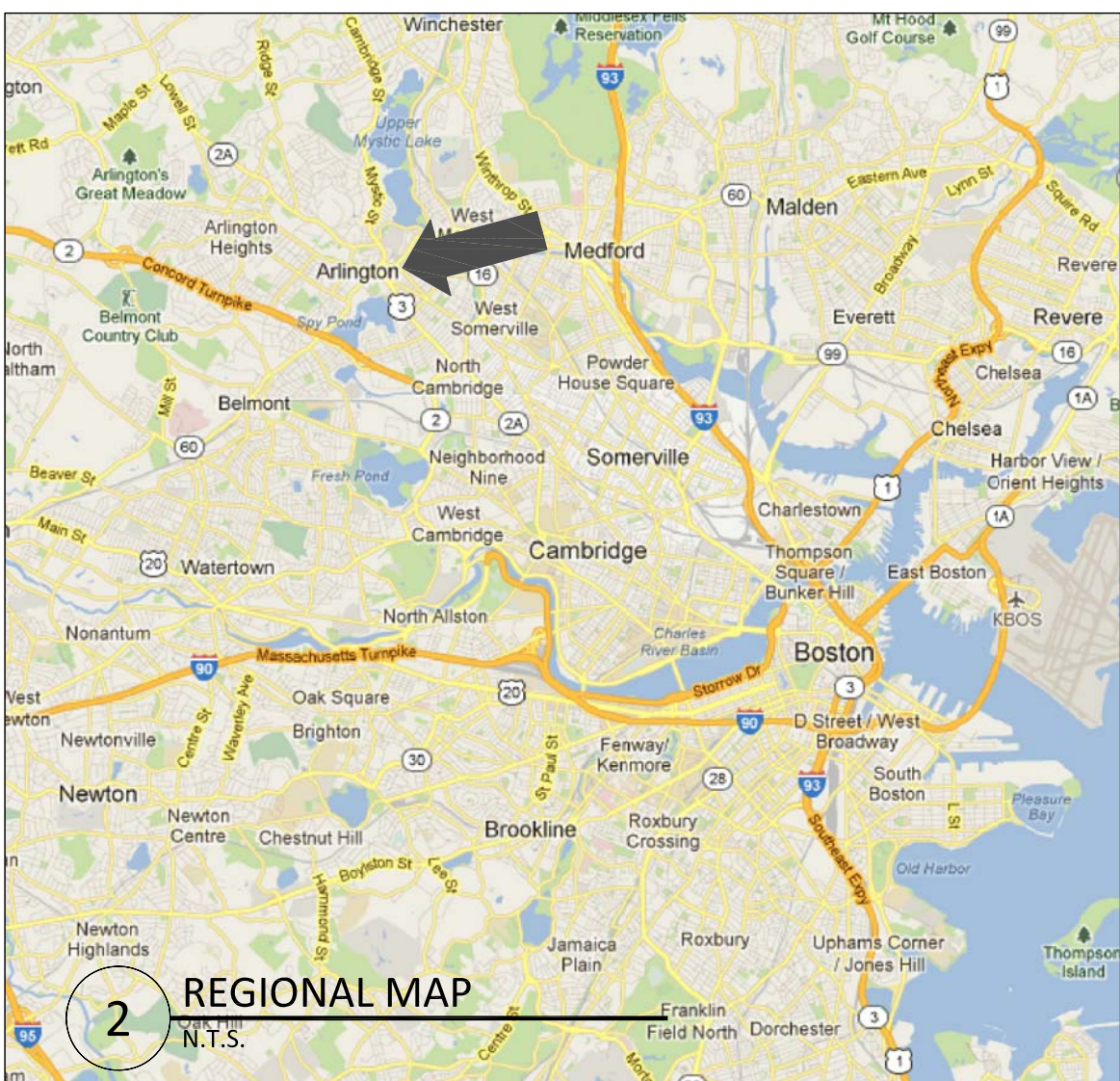
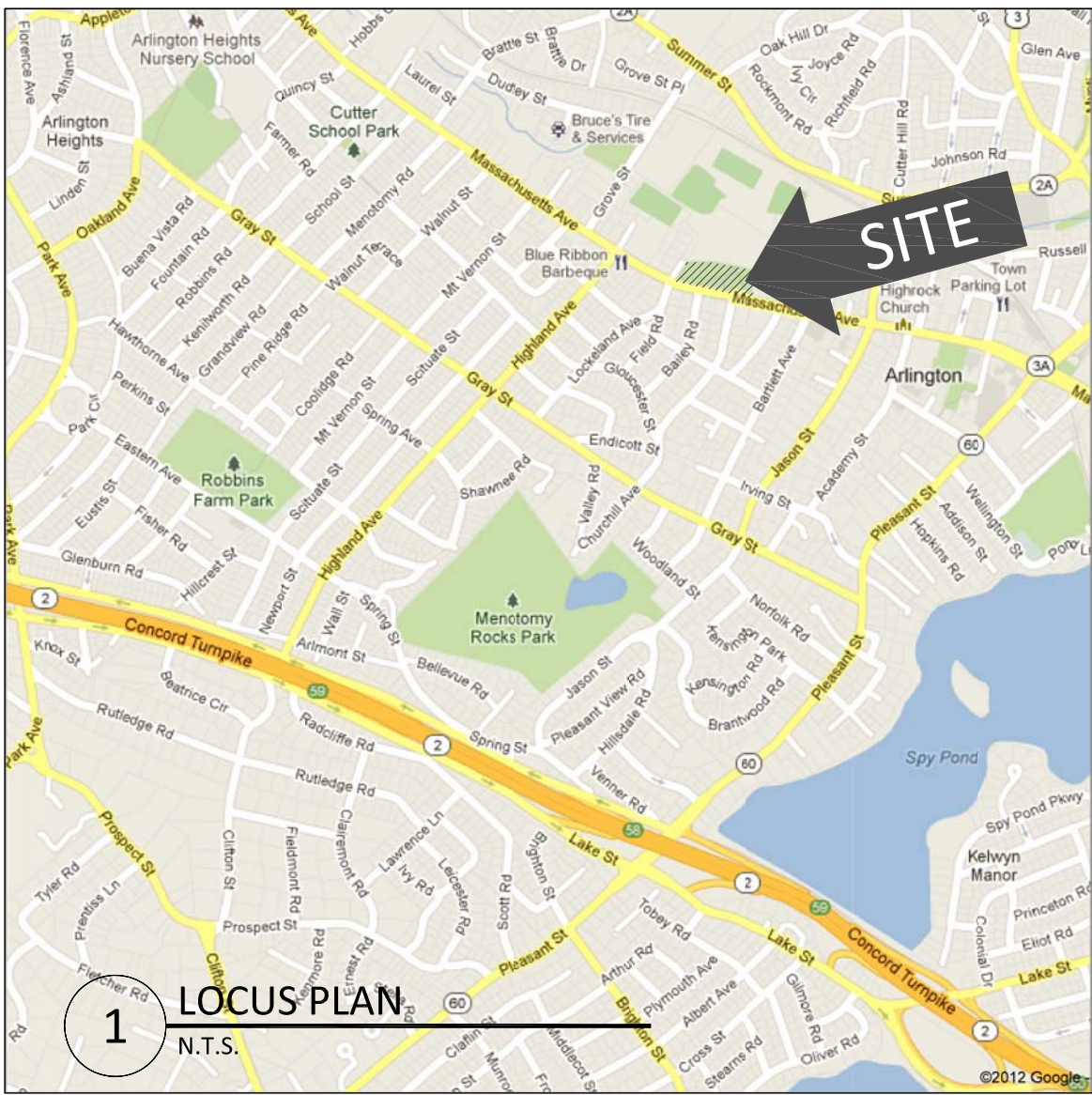
ISSUED FOR CONSTRUCTION

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TUROWSKI2 ARCHITECTURE, Inc.
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MARION, MA 02738
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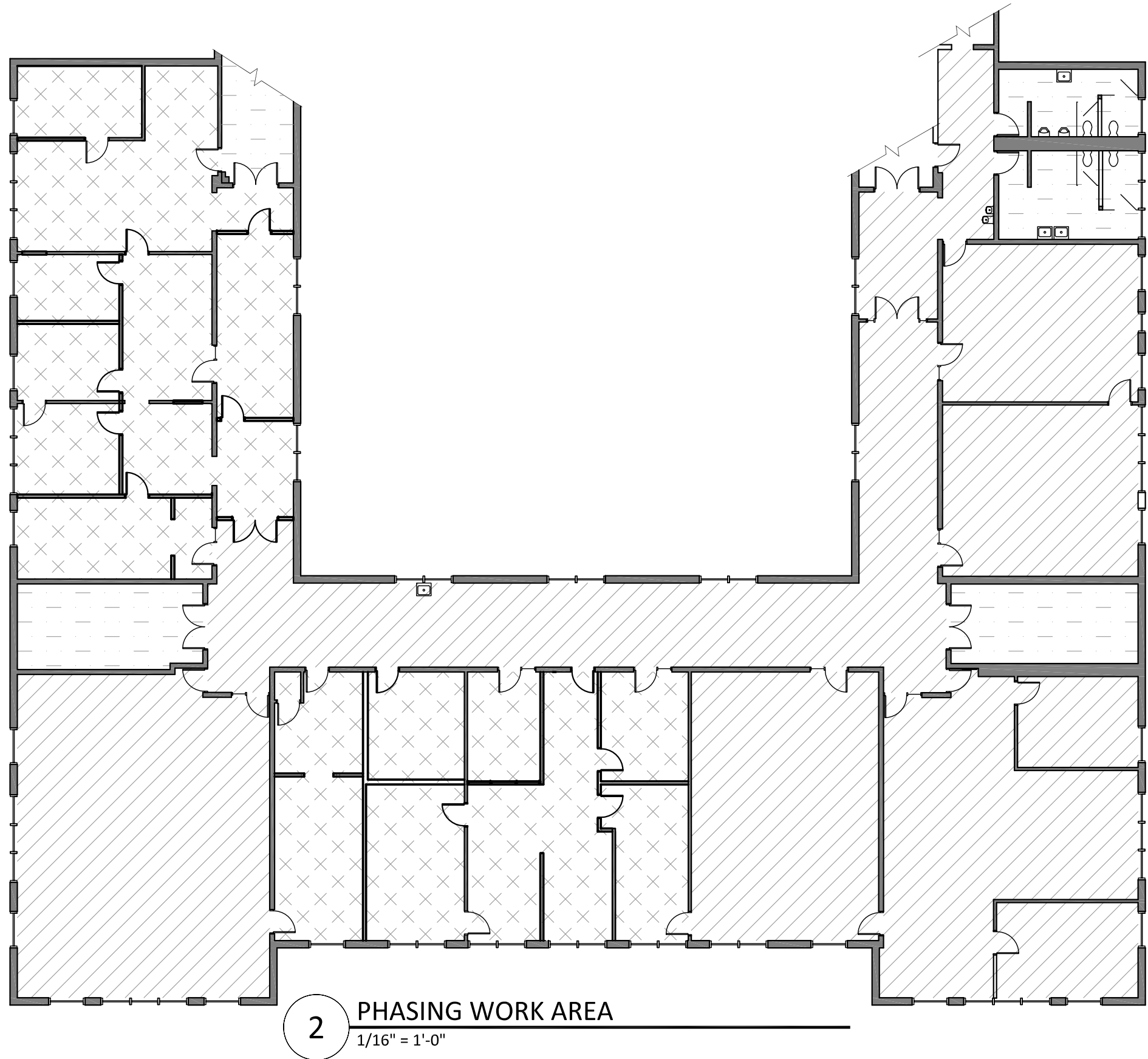
M/E/P/FP ENGINEER:
GARCIA GALUSKA DESOUSA, INC.
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ALTERNATES

ALTERNATE 1: Deduction of work. Eliminate work associated with creating rooms 608C and 609C from project. Refer to Alternate Floor Plan for extent of reduced work. Eliminate all sprinkler upgrades.

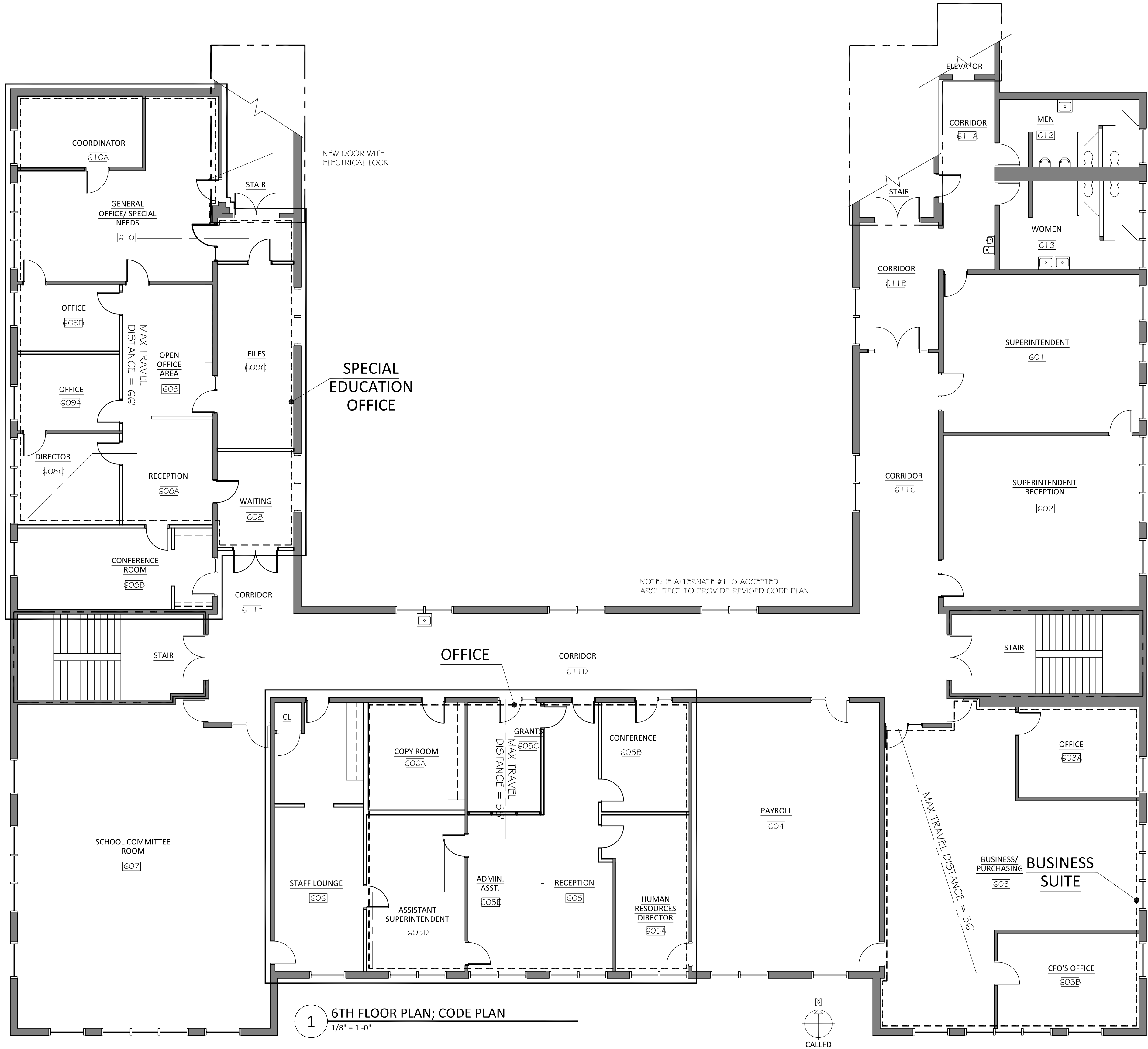
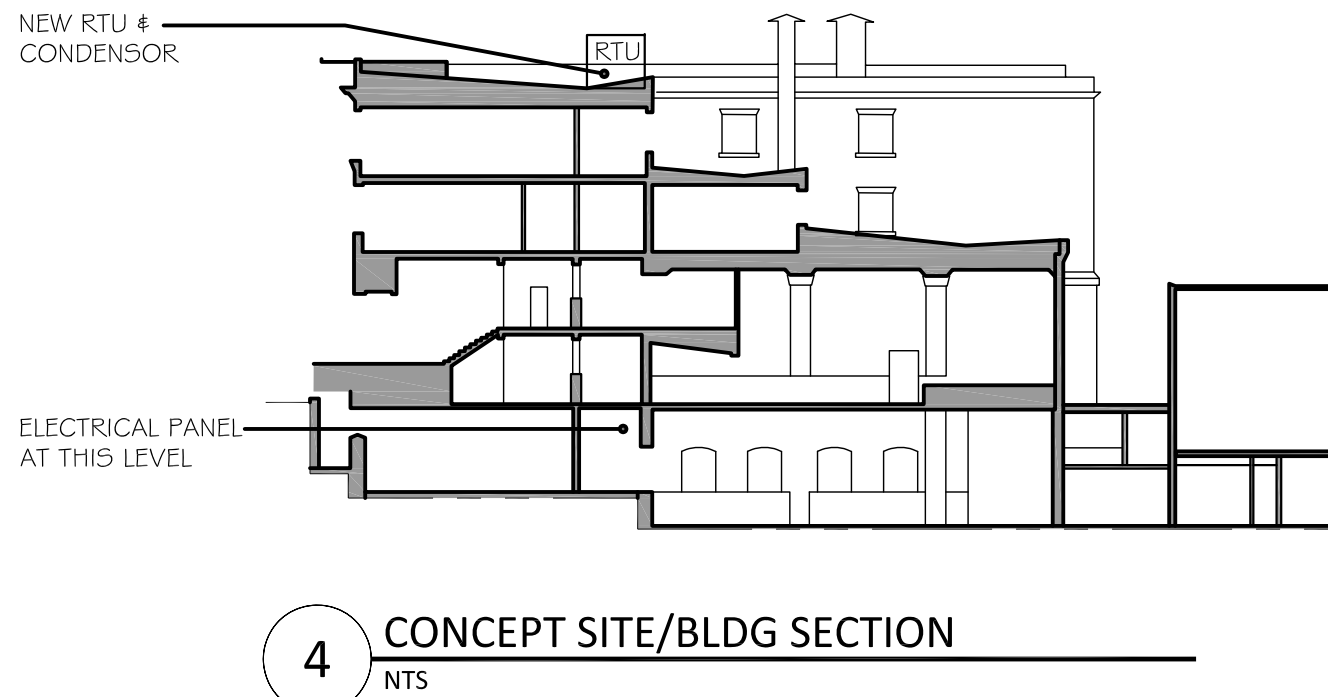
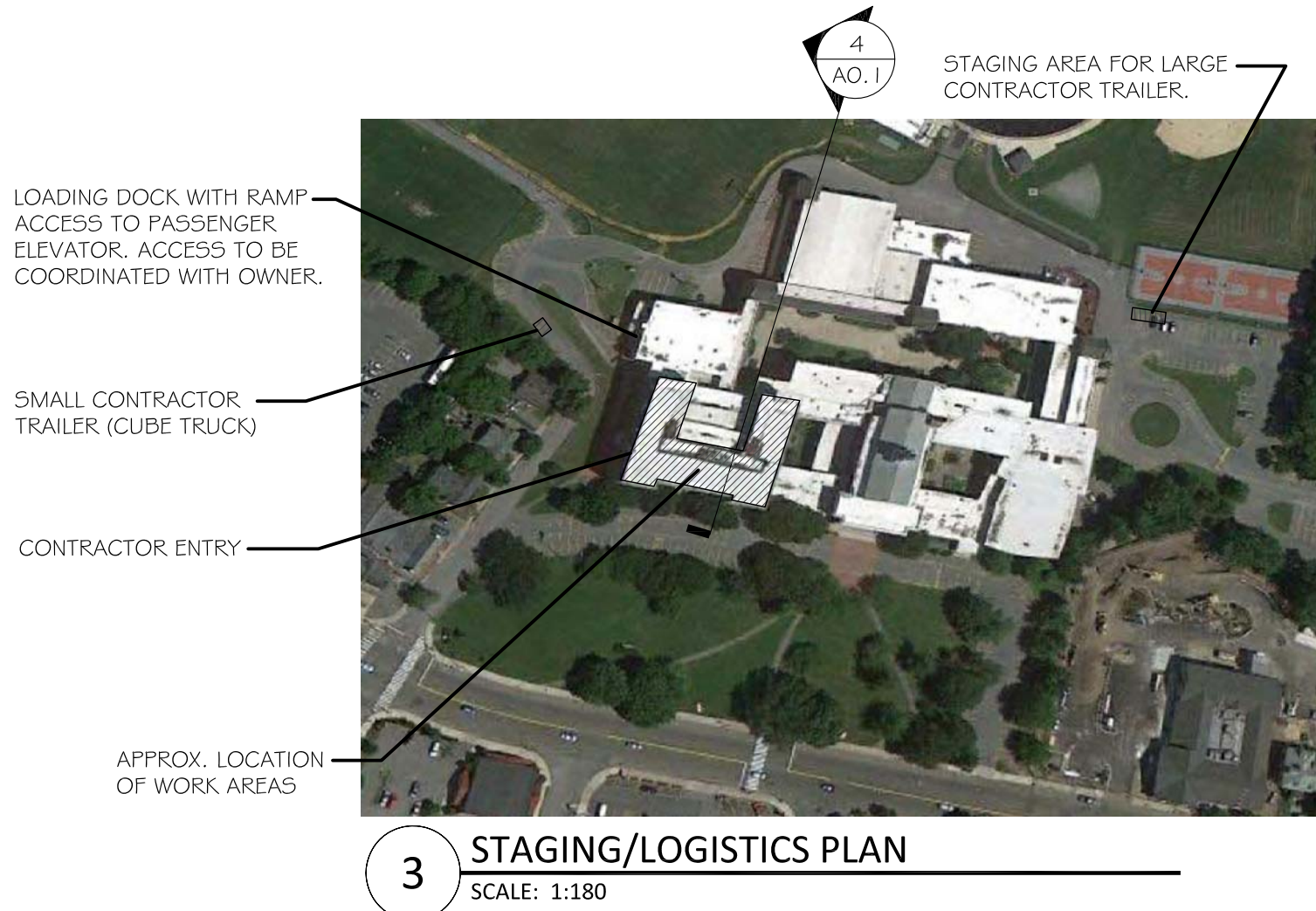
ALTERNATE 2: Deduction of work. Eliminate new roof top unit and modify associated work. Refer to Alternate Roof Plan for extent of reduced scope.



PHASE PLAN - AREA LEGEND:

- PHASE 1: PARTIAL OCCUPANCY. ANTICIPATE UNOCCUPIED OFFICES FOR A DURATION OF 2 WEEKS, TO BE COORDINATED WITH THE OWNER. DURING WHICH INVASIVE CONSTRUCTION/DEMOLITION MAY OCCUR. OTHERWISE ALL WORK MUST ACCOMMODATE OCCUPANCY, BE SEPARATELY SCHEDULED OR OCCUR OUTSIDE OF BUSINESS HOURS (9AM-5PM). CORRIDORS SHALL REMAIN OPEN AND PASSABLE FOR THE ENTIRE DURATION OF THE PROJECT UNLESS COORDINATED WITH THE OWNER, FIRE DEPARTMENT AND INSPECTIONAL SERVICES.
- PHASE 2: NO ACCESS RESTRICTIONS.
- PHASE 3: RESTRICTED ACCESS. MAINTAIN EGRESS AT ALL TIMES.

PHASING: SPECIFIC AREAS OF THE 6TH FLOOR WILL BE SUBJECT TO SCHEDULING CONSTRAINTS: THE GENERAL CONTRACTOR WILL PROVIDE A SCHEDULE OF PROPOSED WORK TO ACCOMMODATE PARTIAL OCCUPANCY IN AREAS NOTED ABOVE. ORDER OF PHASING TO BE DETERMINED BY THE GC AND APPROVED AND COORDINATED WITH THE OWNER PRIOR TO THE START OF WORK.



LEGEND:

- EXISTING WALL:
- NEW WALL:
- 2 HOUR WALL (PER 1978 CONST. DOC.):
- RECONFIGURED AREA:
- OFFICE AREA:

BUILDING SUMMARY

PROJECT DESCRIPTION: LEVEL 2 ALTERATIONS: HVAC SYSTEM REPLACEMENT + RECONFIGURATION OF 4,122 SF

BUILDING CODE:	780 CMR, 8TH EDITION
CONSTRUCTION TYPE:	5. SPRINKLERED
OCCUPANCY GROUP:	B, ACCESSORY TO E
GROSS SQUARE FEET:	14,496 SQ. FT.
TOTAL OCCUPANTS:	238
TOTAL EGRESS CAPACITY:	1440
TYPICAL STAIR WIDTH:	4'-10"
TYPICAL STAIR DOOR WIDTH:	6'-0"
TYPICAL DOOR WIDTH:	3'-0"

OCCUPANCY COUNTS

SUITE/ROOM	SF	OCCUPANCY TYPE	SF/PERSON	OCCUPANTS	REQUIRED EXITS
SPECIAL EDUCATION OFFICE	1922	B	100 SF/P	20	1
CONFERENCE ROOM	285	B - CONF.	15 SF/P	20	
SCHOOL COMMITTEE ROOM	1512	B - CONF.	15 SF/P	101	2
STAFF LOUNGE	437	B - CONF.	15 SF/P	30	
OFFICE	1308	B	100 SF/P	14	1
PAYROLL	936	B - CONF.	100 SF/P	10	
BUSINESS OFFICE	1512	B	100 SF/P	16	1
SUPERINTENDENT RECEPTION	630	B	100 SF/P	7	
SUPERINTENDENT	580	B - CONF.	15 SF/P	20	



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TITLE:
CODE PLAN/
PHASING PLAN/
SITE PLAN

JOB NUMBER:

12-15

DRAWN BY:

MED

CHECKED BY:

PJT

DATE:

March 27, 2013

SCALE:

AS NOTED

SHEET NO:

A0.1



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TITLE:
EXISTING/
DEMO
FLOOR PLAN

JOB NUMBER:

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SCALE:

AS NOTED

SHEET NO:

AD1.1

GENERAL NOTES - DEMO:

1. REFER TO SPEC. SECTION 003100-PROJECT INFORMATION, 020600-ASBESTOS ABATEMENT, 020620-MISCELLANEOUS HAZARDOUS MATERIALS REMOVAL FOR HAZARDOUS MATERIAL HANDLING REQUIREMENTS.
2. ALL DEMOLITION THAT DISTURBS HAZARDOUS MATERIAL MUST BE PERFORMED UNDER CONTAINMENT.
3. PROTECT OWNERS FIXED EQUIPMENT LEFT IN PLACE DURING DEMOLITION.
4. SEE MEP/FP DRAWINGS FOR ADDITIONAL DEMO SCOPE.

DEMO KEY NOTES:

- ▽ THE CONTRACTOR SHALL REMOVE ALL CARPET AND ASSOCIATED ADHESIVE WITHIN FULL CONTAINMENT WITH NEGATIVE AIR FILTRATION (AS AN ENGINEERING CONTROL). CARPET MAY BE DISPOSED OF AS GENERAL CONSTRUCTION WASTE IF NO DISTURBANCE IS MADE TO UNDERLYING ASBESTOS - CONTAINING FLOOR TILE.
- ▽ THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL LOOSE/DAMAGED VINYL ASBESTOS FLOOR TILE RESULTING FROM CARPET REMOVAL (WITHIN FULL CONTAINMENT) TO ESTABLISH SOUND BASE FOR NEW CARPET.
- ▽ THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF ALL LOOSE/DAMAGED VINYL ASBESTOS FLOOR TILE RESULTING FROM WALL REMOVAL (WITHIN FULL CONTAINMENT) TO ESTABLISH SOUND BASE FOR NEW CARPET.
- ▽ THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF TOP LAYER VINYL ASBESTOS FLOOR TILE ONLY LEAVING MASTIC ADHESIVE (WITHIN FULL CONTAINMENT) TO EXISTING UNDERLAYMENT TO ACCOMMODATE NEW WALLS.
- ▽ THE HAZARDOUS MATERIALS ABATEMENT CONTRACTOR SHALL REMOVE AND DISPOSE OF 4 SF OF ALL FLOORING LAYERS (TO EXISTING SUBFLOOR) TO FACILITATE CORE DRILLING ON ALL FLOORS. REMOVAL SHALL OCCUR WITHIN (6) MINI-ENCLOSURE CONTAINMENTS WHERE NOTED FOR NEW ELECTRICAL CONDUIT EXTENDING FROM 6TH FLOOR TO BASEMENT.

GENERAL KEY NOTES:

- ▽ WHILE UNDER CONTAINMENT GC TO PATCH FLOORING WITH NEW RESILIENT FLOORING TO ESTABLISH ENCAPSULATION AND A SOUND BASE FOR NEW CARPET...

ALTERNATES

ALTERNATE 1: DEDUCTION OF WORK. ELIMINATE WORK ASSOCIATED WITH CREATING ROOMS 608C AND 609C FROM PROJECT. REFER TO ALTERNATE FLOOR PLAN FOR EXTENT OF REDUCED WORK. ELIMINATE ALL SPRINKLER UPGRADES.

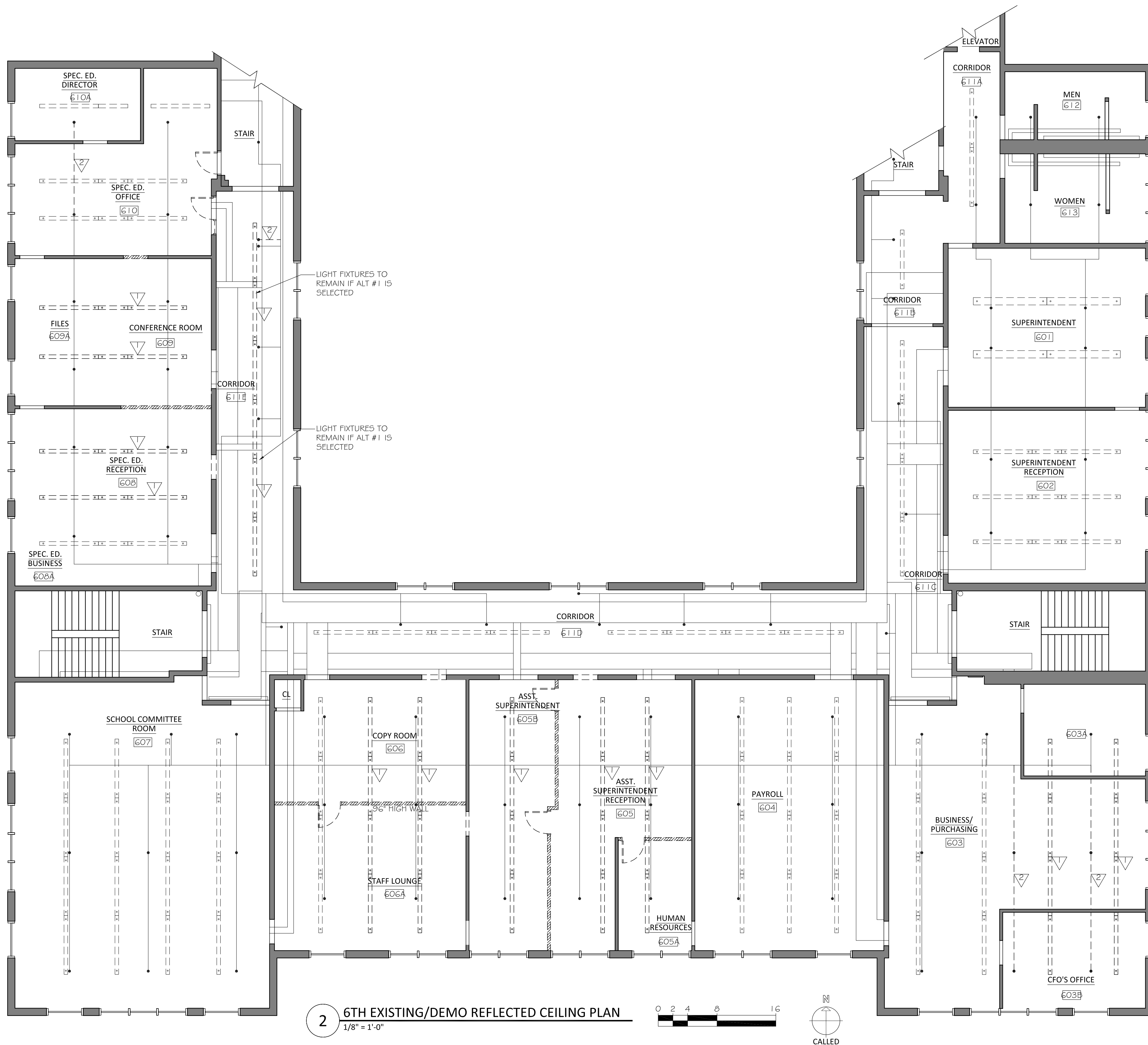
ALTERNATE 2: DEDUCTION OF WORK. ELIMINATE NEW ROOF TOP UNIT AND MODIFY ASSOCIATED WORK. REFER TO ALTERNATE ROOF PLAN FOR EXTENT OF REDUCED SCOPE.



1 6TH FLOOR EXISTING/DEMO PLAN
1/8" = 1'-0"

DEMO LEGEND:

- EXISTING WALL:
- DEMO WALL:
- DEMO DOOR AND FRAME:
- DEMO FLOORING:



ALTERNATES

ALTERNATE 1: DEDUCTION OF WORK. ELIMINATE WORK ASSOCIATED WITH CREATING ROOMS 606C AND 609C FROM PROJECT. REFER TO ALTERNATE FLOOR PLAN FOR EXTENT OF REDUCED WORK. ELIMINATE ALL SPRINKLER UPGRADES.

ALTERNATE 2: DEDUCTION OF WORK. ELIMINATE NEW ROOF TOP UNIT AND MODIFY ASSOCIATED WORK. REFER TO ALTERNATE ROOF PLAN FOR EXTENT OF REDUCED SCOPE.

GENERAL NOTES - RCP DEMO:

- EXISTING CEILING JOISTS 16' O.C., TYP.
- ELECTRICAL TO REUSE EXISTING PENDANT LOCATIONS TO GREATEST EXTENT POSSIBLE.
- COVER PLATES TO BE INSTALLED AT UNUSED EXISTING PENDANT LOCATIONS.
- PROTECT EXISTING EQUIPMENT TO REMAIN IN AREAS TO RECEIVE PAINT.

DEMO RCP KEYNOTES

- REMOVE EXISTING LIGHT FIXTURES. SEE ELECTRICAL.
- REMOVE SPRINKLER. SEE FIRE PROTECTION.

DEMO LEGEND:

- PENDANT LIGHT FIXTURES:
- SPRINKLER LINES:
- DEMO SPRINKLER LINES:
- DEMO WALL:
- EXISTING MECH:

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**EXISTING/DEMO REFLECTED
CEILING PLAN**

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AD1.2



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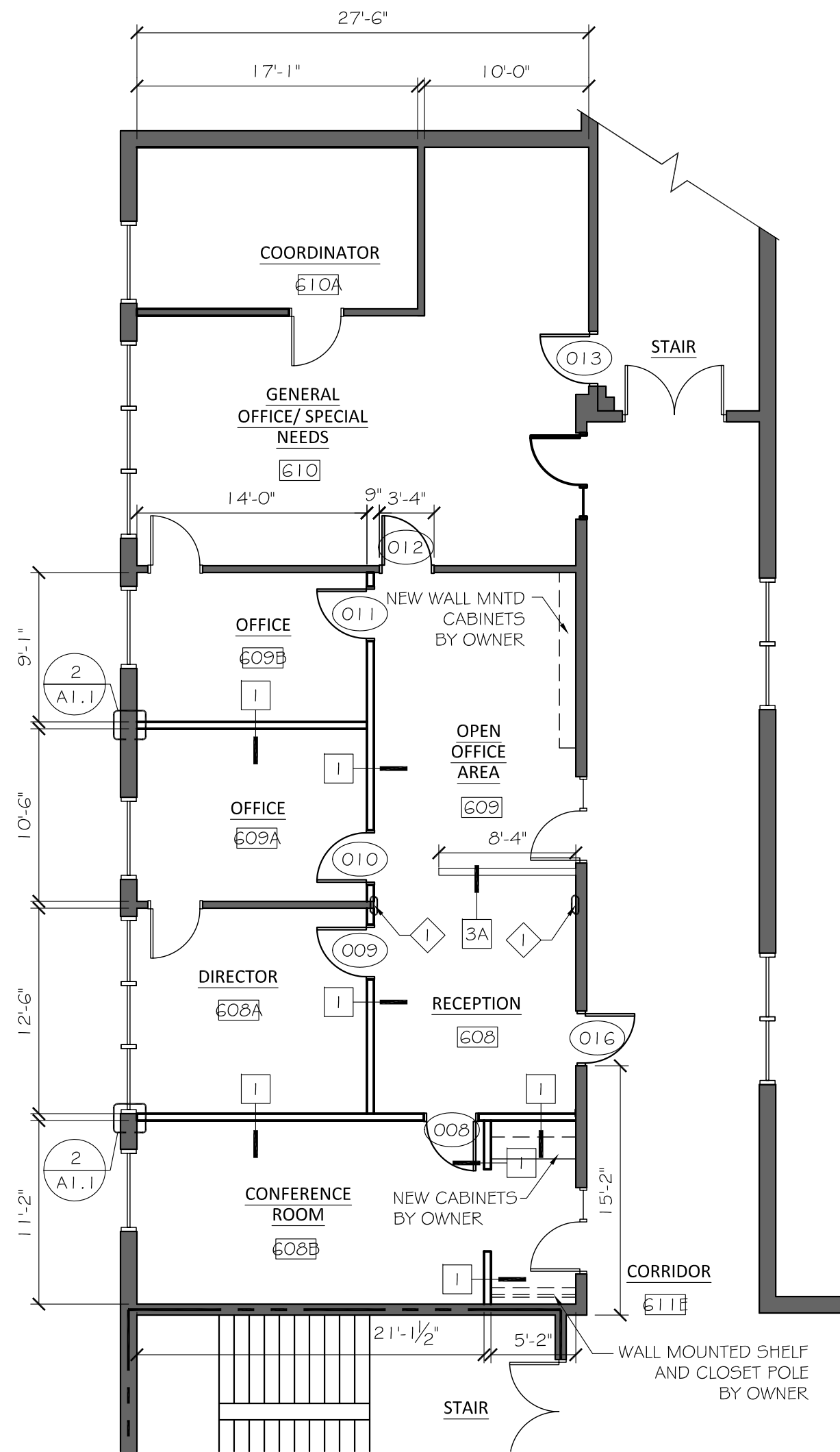
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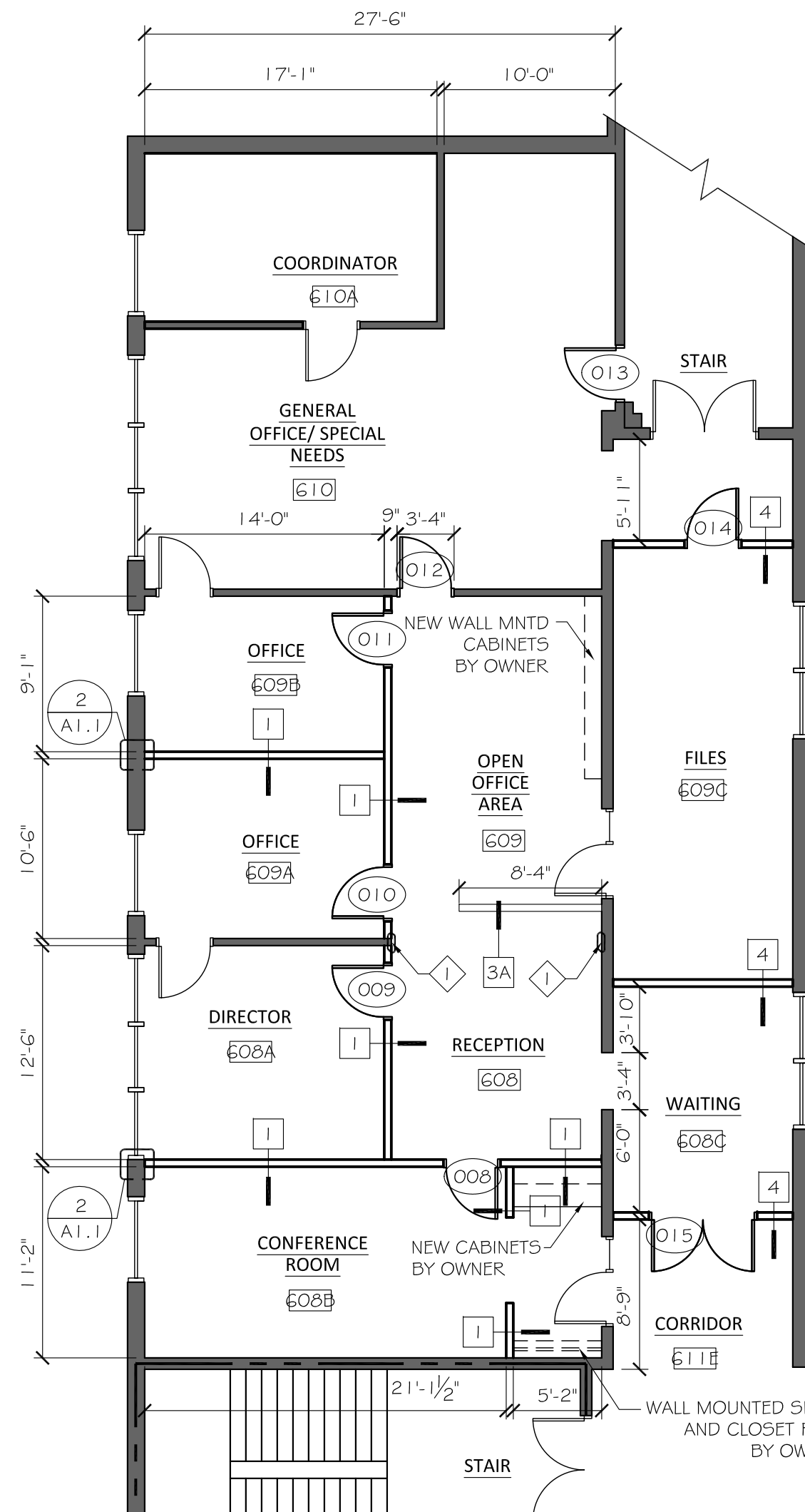
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SHEET NO:

A1.1



1A 6TH FLOOR PROPOSED PLAN - ALTERNATE #1
1/8" = 1'-0"



1 6TH FLOOR PROPOSED PLAN - BASE BID
1/8" = 1'-0"

ALTERNATES

ALTERNATE 1: DEDUCTION OF WORK. ELIMINATE WORK ASSOCIATED WITH CREATING ROOMS 608C AND 609C FROM PROJECT. REFER TO ALTERNATE FLOOR PLAN FOR EXTENT OF REDUCED WORK. ELIMINATE ALL SPRINKLER UPGRADES.

ALTERNATE 2: DEDUCTION OF WORK. ELIMINATE NEW ROOF TOP UNIT AND MODIFY ASSOCIATED WORK. REFER TO ALTERNATE ROOF PLAN FOR EXTENT OF REDUCED SCOPE.

GENERAL NOTES:

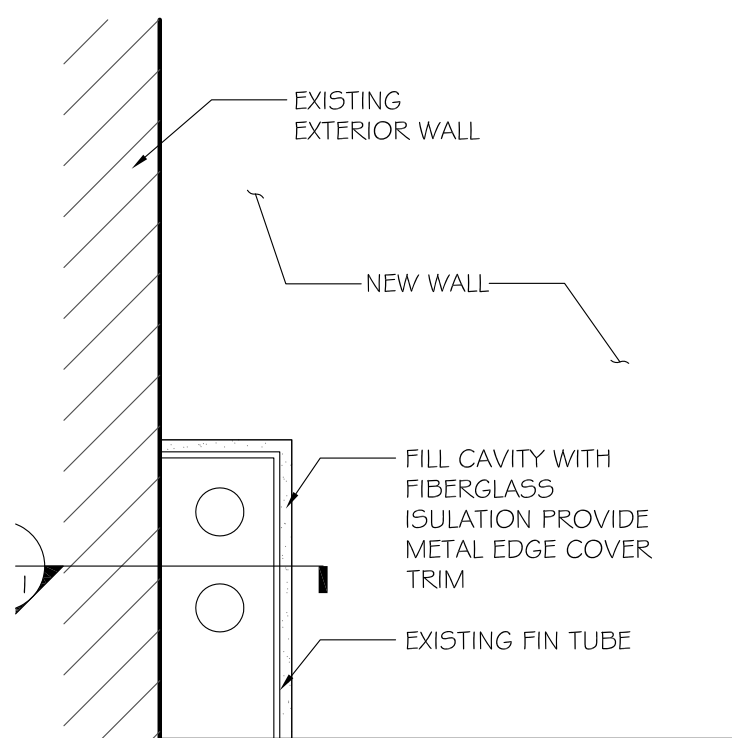
- GC PROVIDE BLOCKING FOR OWNER FURNISHED AND INSTALLED WORK.
- PROTECT OWNERS FIXED EQUIPMENT LEFT IN PLACE
- SEE SHEET A1.4 FOR WALL TYPES

KEY NOTES:

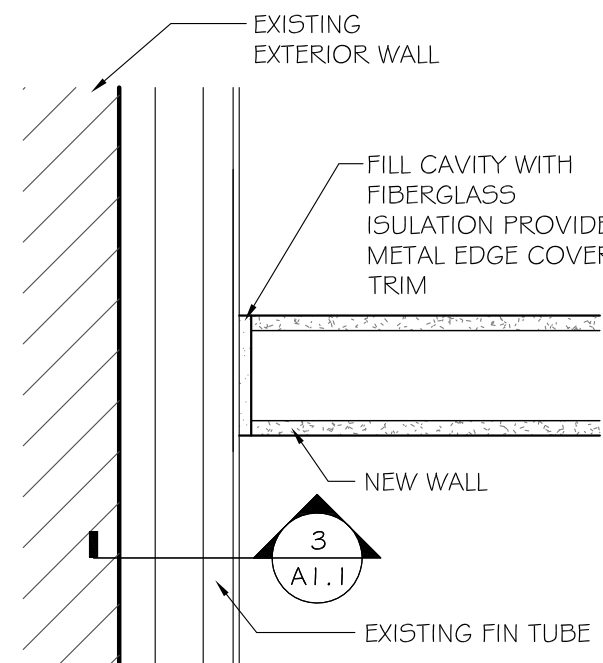
- PATCH GYP BD WALL, WHERE EXIST WALL WAS REMOVED, TO MATCH EXISTING

WALL LEGEND:

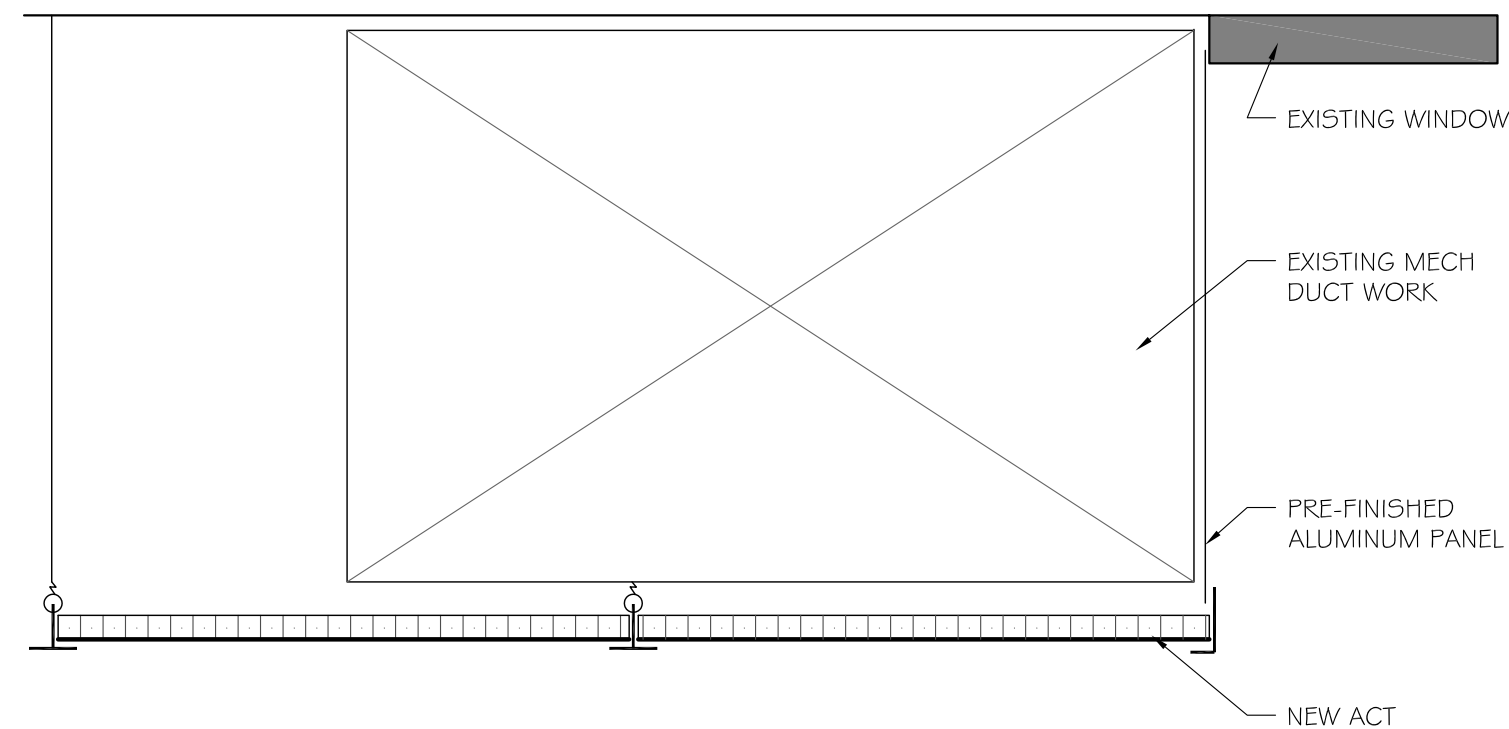
EXISTING WALL:
NEW WALL:
2 HOUR WALL:



3 FIN TUBE SOUND PROOFING DETAIL
1 1/2" = 1'-0"



2 FIN TUBE SOUND PROOFING DETAIL
1 1/2" = 1'-0"



3 SOFFIT DETAIL
1 1/2" = 1'-0"

ALTERNATES

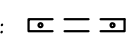
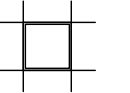

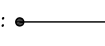

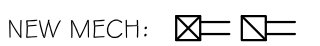
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ALTERNATE 2: DEDUCTION OF WORK. ELIMINATE NEW ROOF TOP UNIT AND MODIFY ASSOCIATED WORK. REFER TO ALTERNATE ROOF PLAN FOR EXTENT OF REDUCED SCOPE.

KEY NOTES

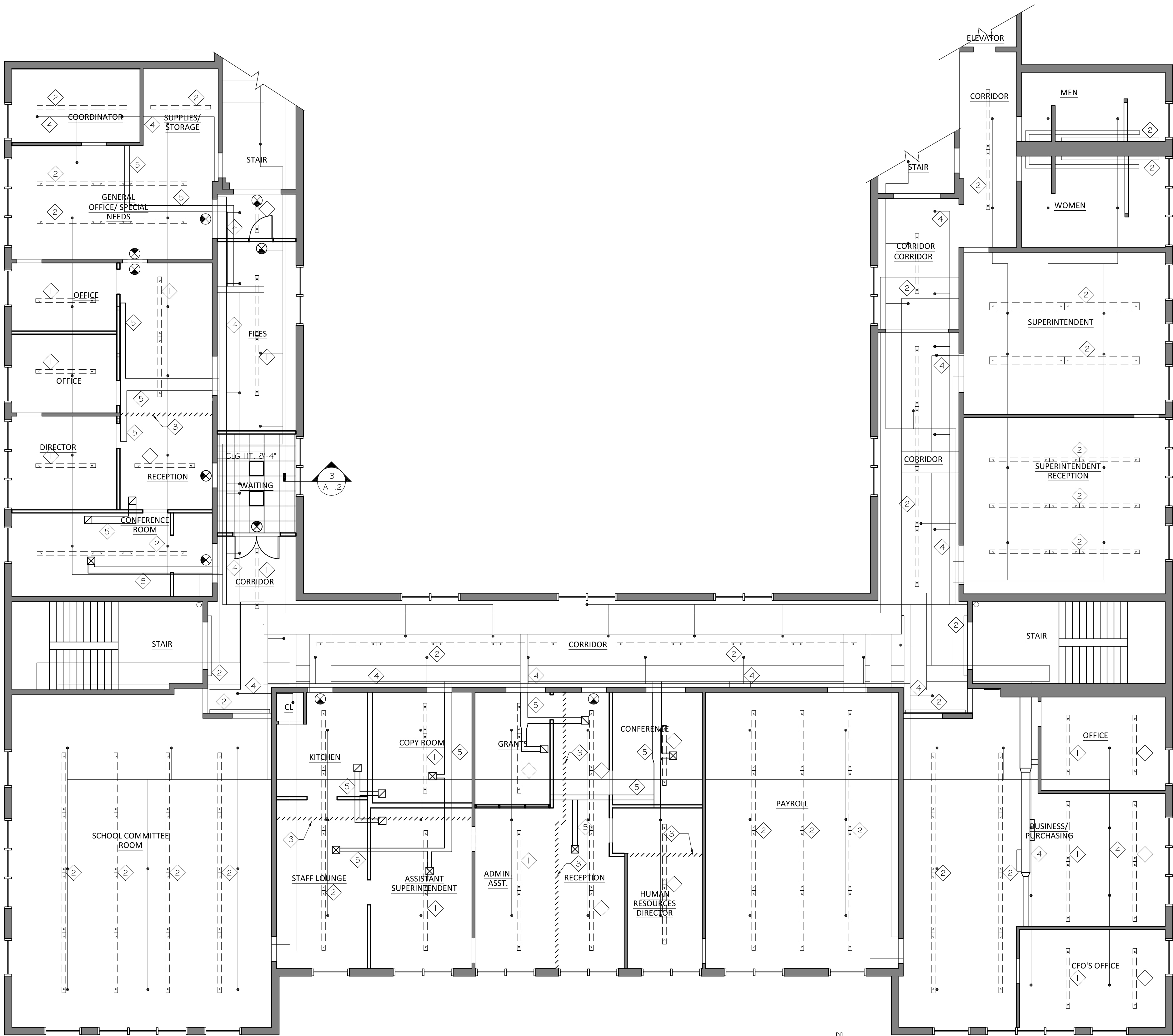
- 1 NEW LIGHT FIXTURES REFER TO ELEC DWGS
- 2 EXISTING LIGHT FIXTURES
- 3 PATCH GYP BD CEILING TO MATCH EXISTING; WHERE WALL WAS REMOVED.
- 4 NEW SPRINKLER REFER TO MECH DWGS
- 5 NEW MECH

LEGEND:

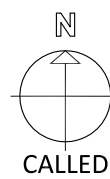
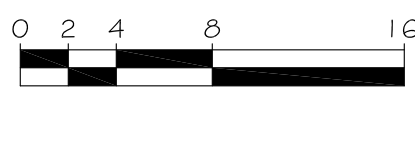
PENDANT LIGHT FIXTURES: 
2x2 RECESSED LIGHT FIXTURES WITH 2x2 SUSPENDED ACOUSTIC CEILING: 
EXIT SIGN: 
SPRINKLER LINES: 
EXISTING MECH: 
NEW MECH: 

GENERAL NOTES :

1. PROTECT EXISTING EQUIPMENT TO REMAIN IN AREAS TO RECEIVE PAINT.



2 6TH PROPOSED REFLECTED CEILING PLAN - BASE BID
1/8" = 1'-0"



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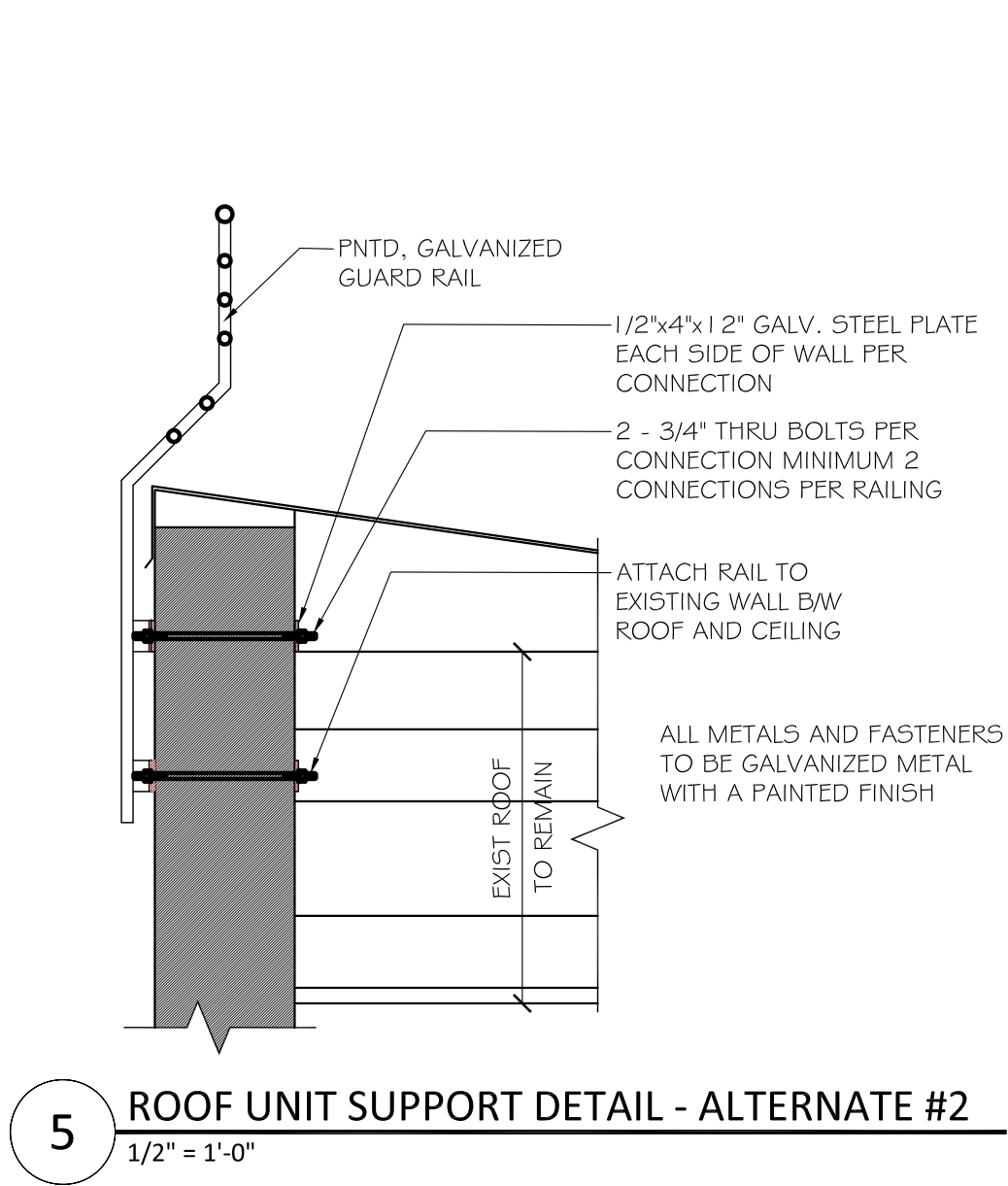
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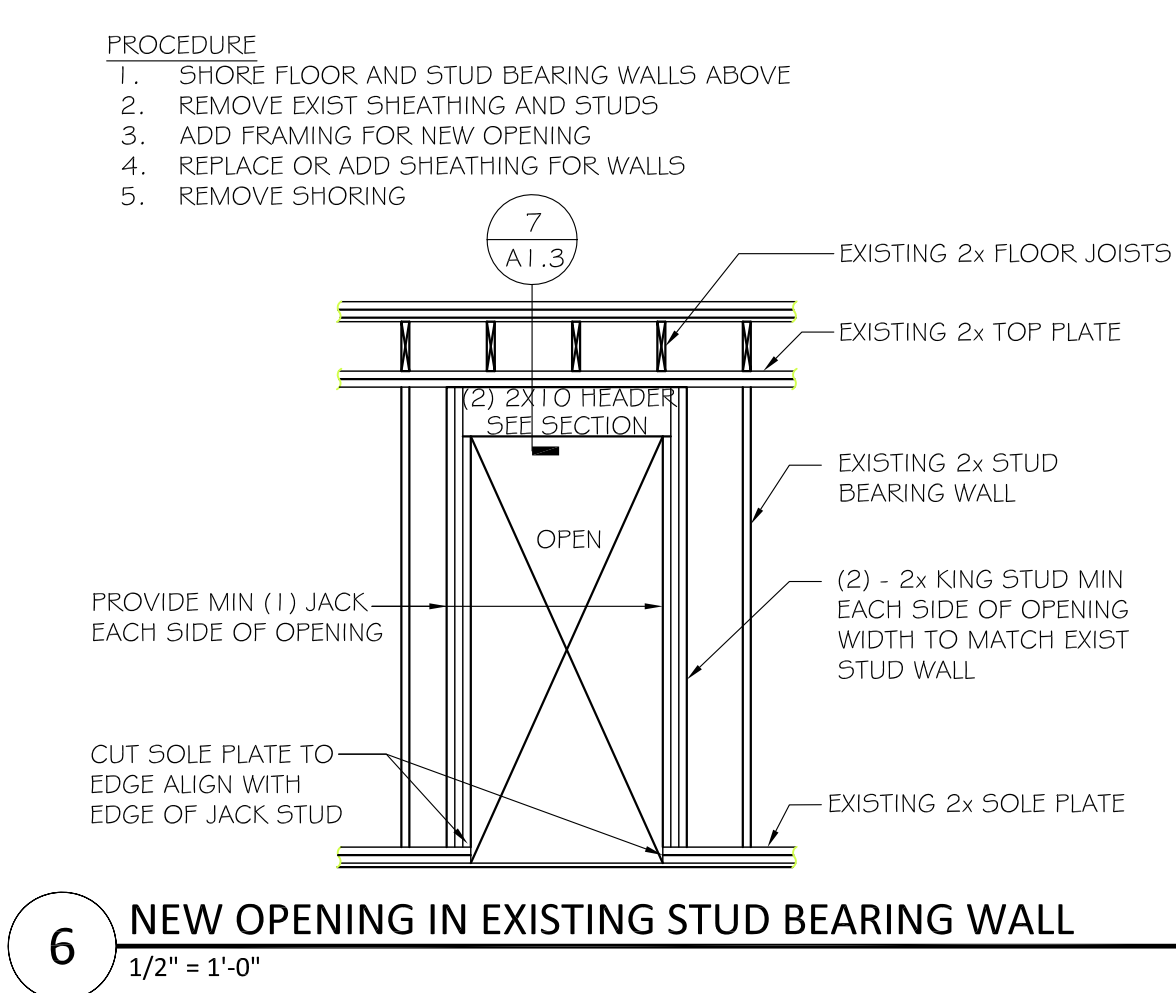
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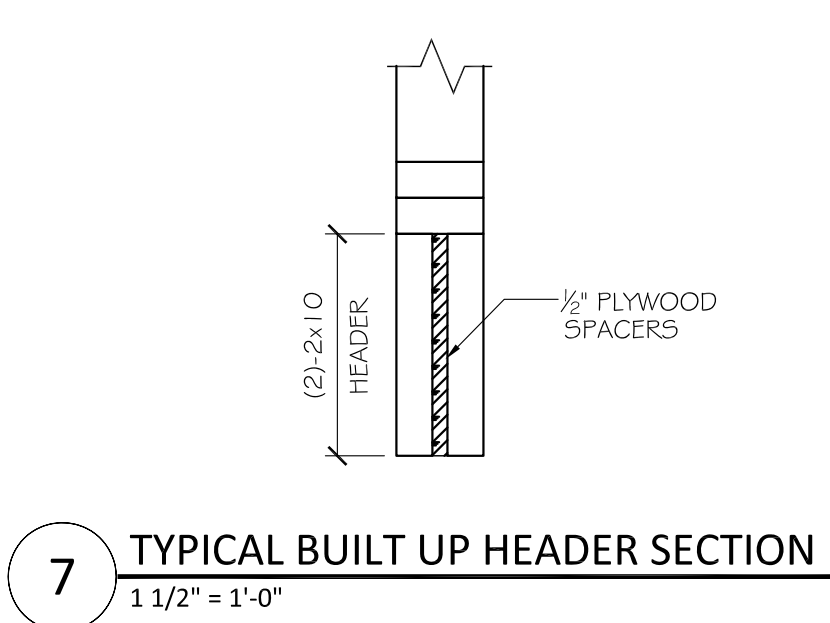
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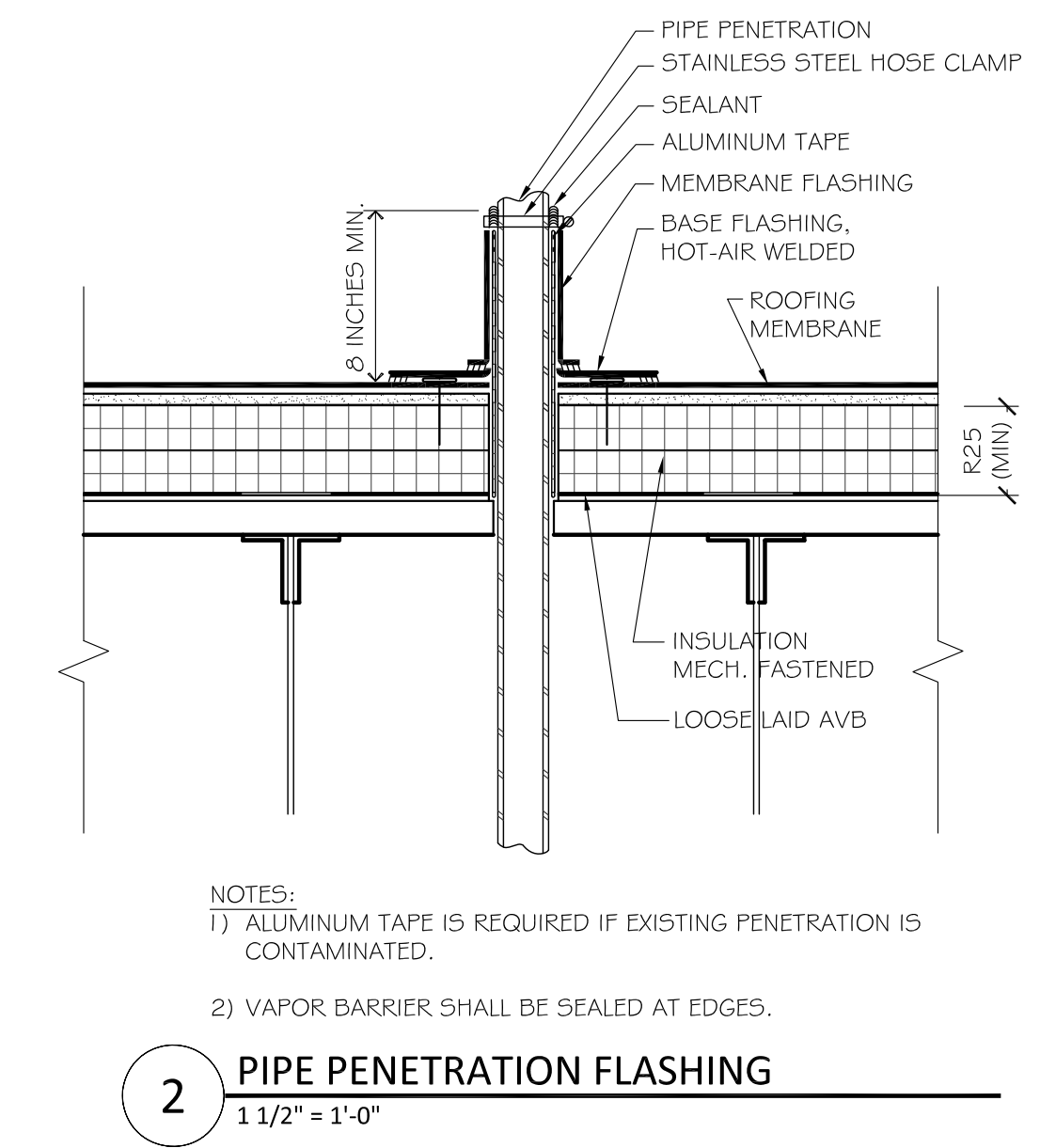
5 ROOF UNIT SUPPORT DETAIL - ALTERNATE #2
1/2" = 1'-0"



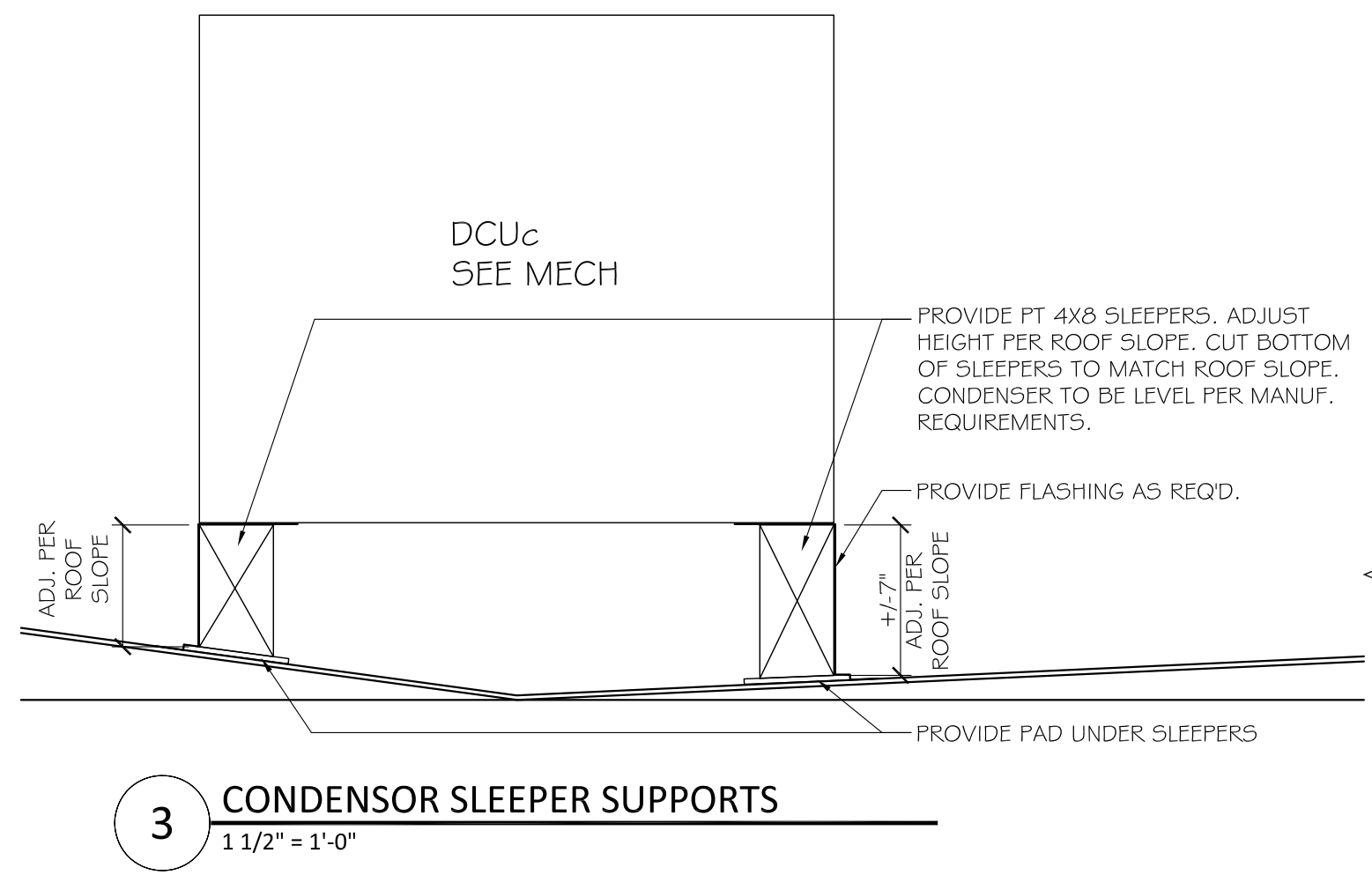
6 NEW OPENING IN EXISTING STUD BEARING WALL
1/2" = 1'-0"



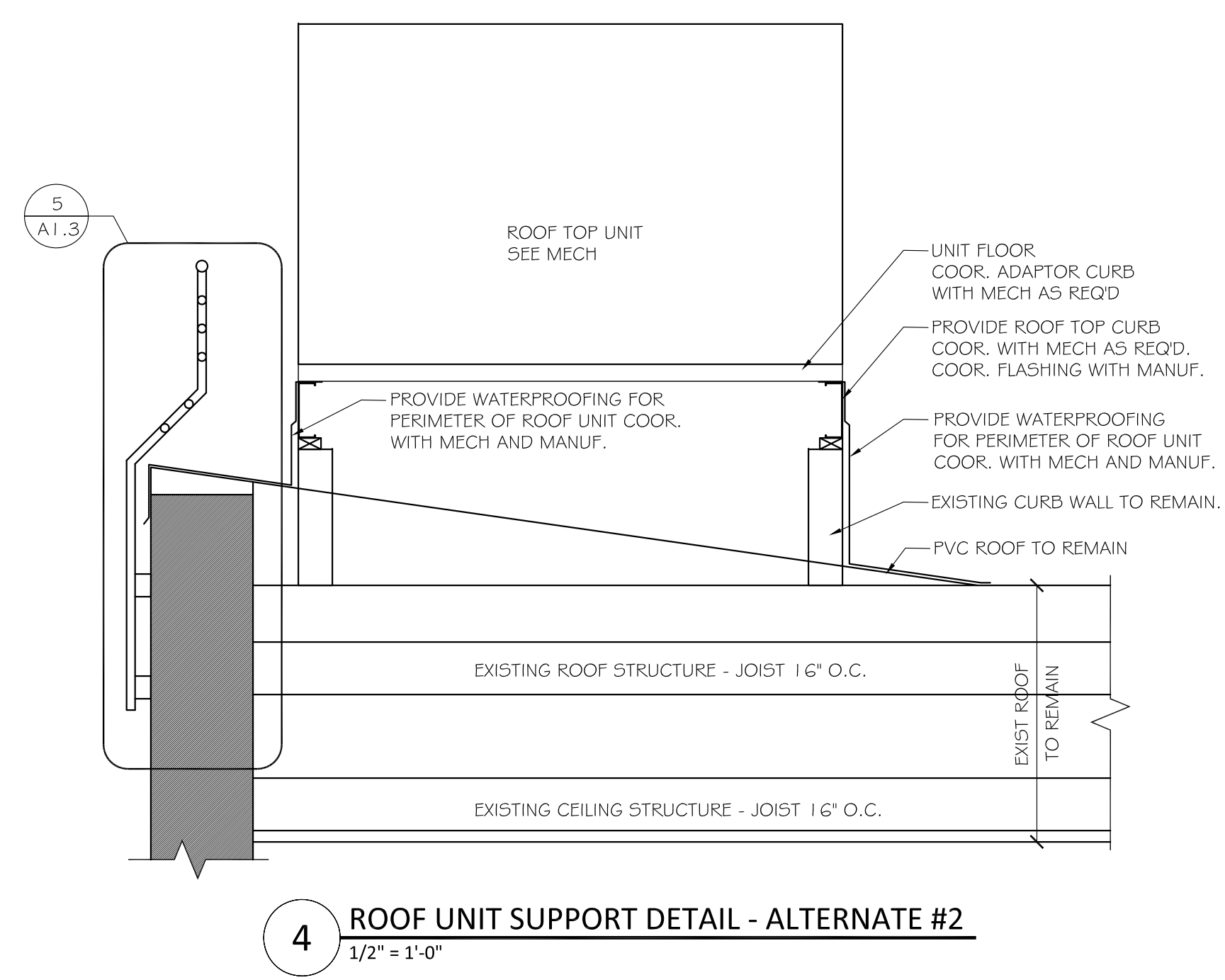
7 TYPICAL BUILT UP HEADER SECTION
1 1/2" = 1'-0"



2 PIPE PENETRATION FLASHING
1 1/2" = 1'-0"

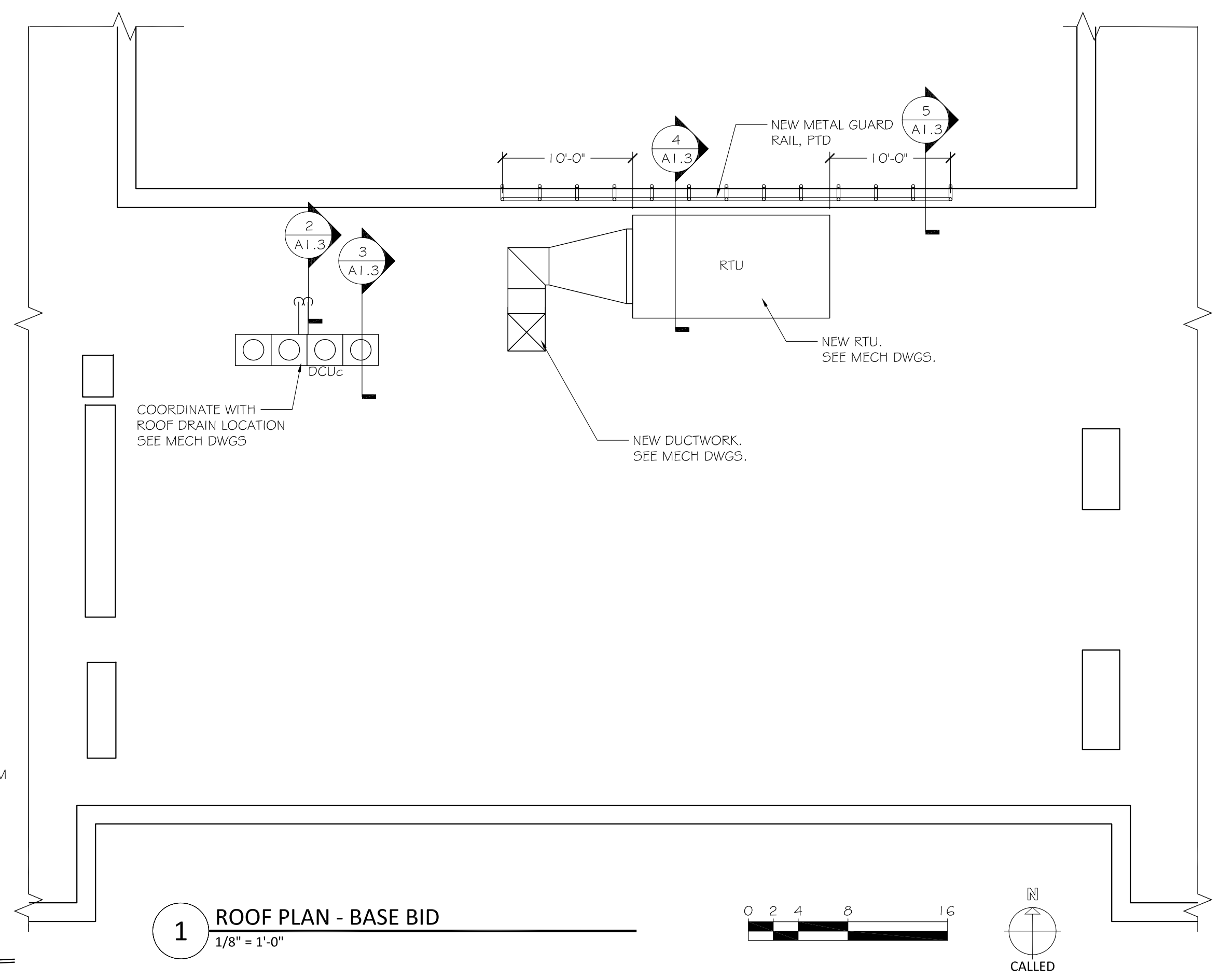


3 CONDENSOR SLEEPER SUPPORTS
1 1/2" = 1'-0"

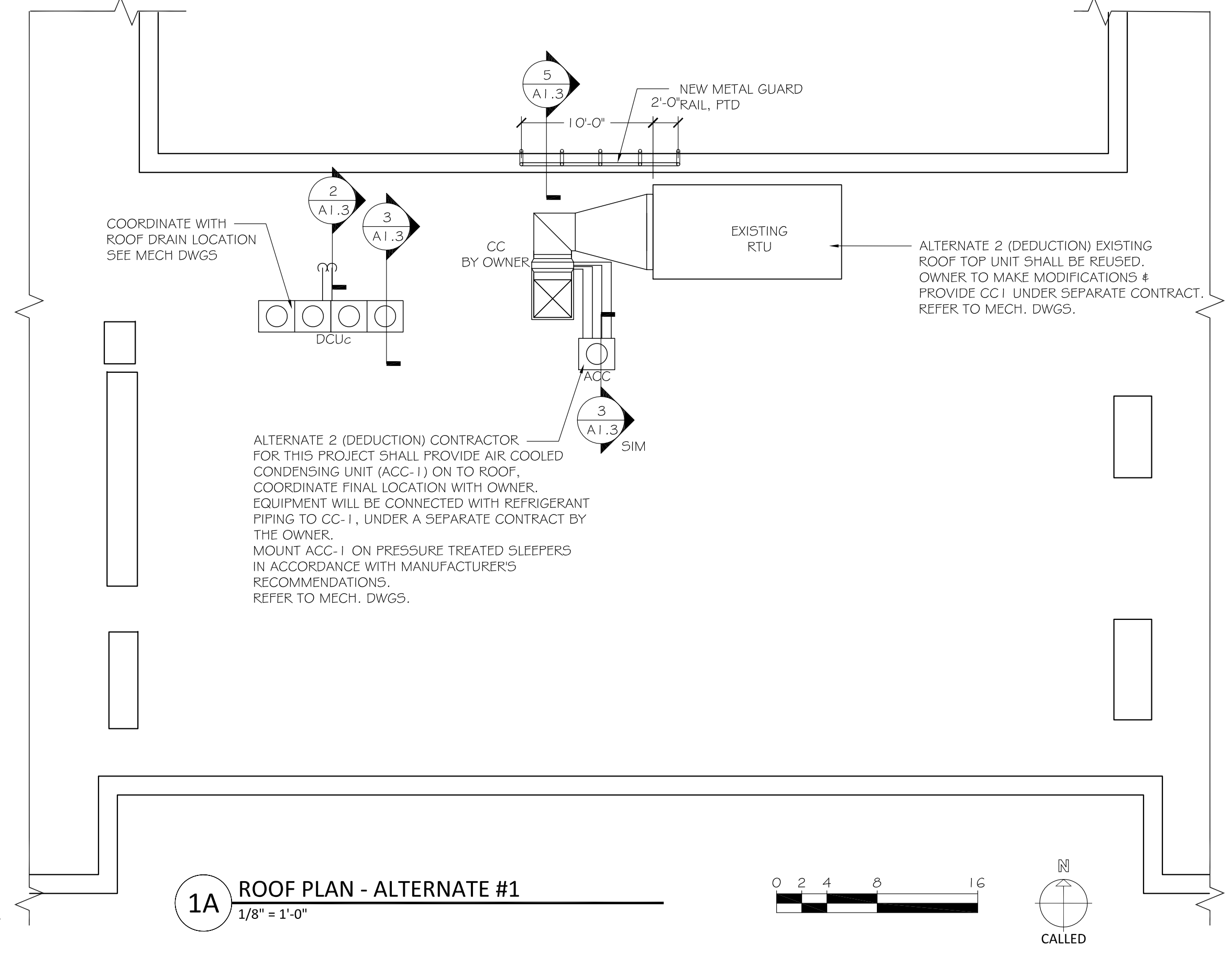


4 ROOF UNIT SUPPORT DETAIL - ALTERNATE #2
1/2" = 1'-0"

GENERAL NOTES:
1. EXISTING ROOF TO BE PROTECTED.
2. REFER TO SPEC. SECTION 003100-PROJECT INFORMATION, 020800-ASBESTOS ABATEMENT, 020820-MISCELLANEOUS HAZARDOUS MATERIALS REMOVAL FOR HAZARDOUS MATERIAL HANDLING REQUIREMENTS.



1 ROOF PLAN - BASE BID
1/8" = 1'-0"



1A ROOF PLAN - ALTERNATE #1
1/8" = 1'-0"



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A1.3

ROOM FINISH SCHEDULE									
ROOM	FLOOR	CEILING	HEIGHT	WALL				BASE	COMMENTS
#	NAME			NORTH	EAST	SOUTH	WEST		
601	SUPERINTENDENT	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	
602	SUPERINTENDENT RECEPTION	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	
603	BUSINESS/PURCHASING	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	
603A	OFFICE	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	
603B	CFP'S OFFICE	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	
604	PAYROLL	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	EXIST	
605B	CONFERENCE	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
605A	HUMAN RESOURCES DIRECTOR	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
605	RECEPTION	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
605E	ADMIN ASST.	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
605C	GRANTS	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
605D	ASST. SUPERINTENDENT	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
606A	COPY ROOM	VCT	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
606	STAFF LOUNGE	VCT	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
607	SCHOOL COMMITTEE ROOM	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
608	RECEPTION	CARPET	ACT	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
608B	CONFERENCE ROOM	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
608A	DIRECTOR	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
608C	WAITING	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
609	OPEN OFFICE AREA	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
609A	OFFICE	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
609B	OFFICE	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
609C	FILES	VCT	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
610	GENERAL OFFICE/SPECIAL NEEDS	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
610A	COORDINATOR	CARPET	PAINTED	EXIST	PAINTED	PAINTED	PAINTED	VINYL	
611	CORRIDOR	EXIST	PTD/ALT	EXIST	EXIST	EXIST	EXIST	VINYL	BASE BID - PAINT NEW PIPING; ALT #1-PAINT ALL PIPING

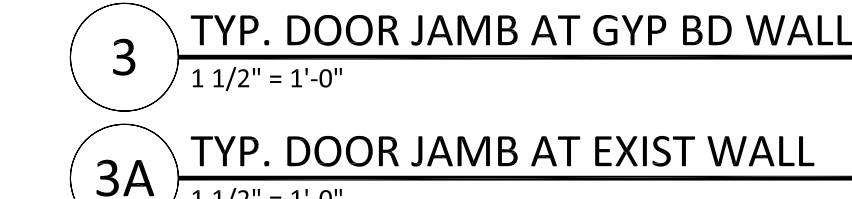
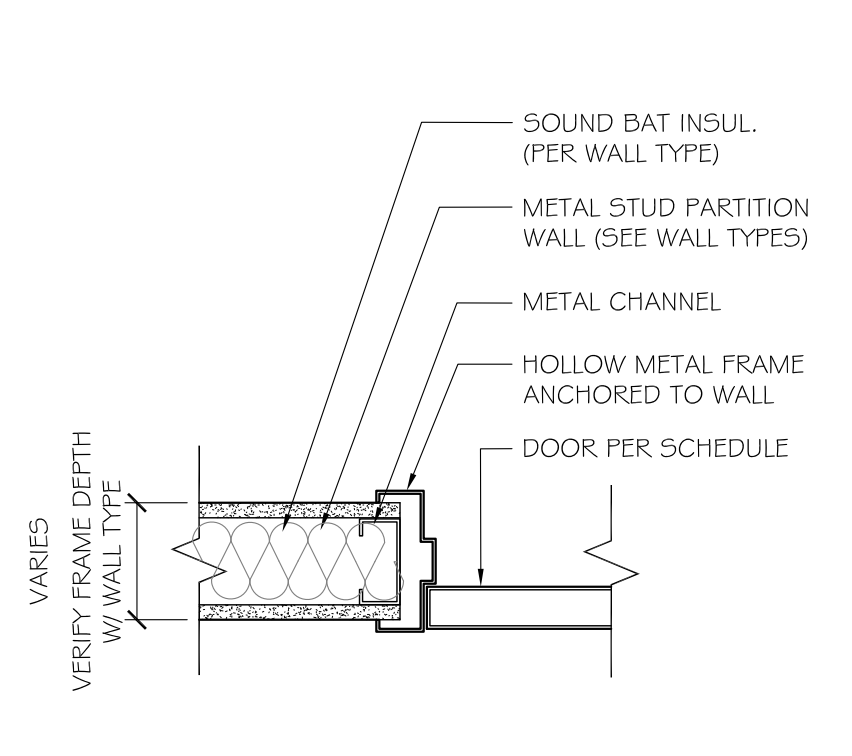
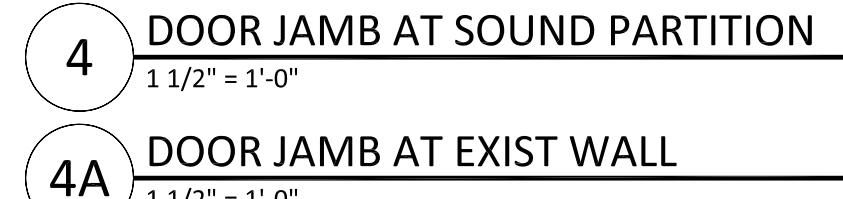
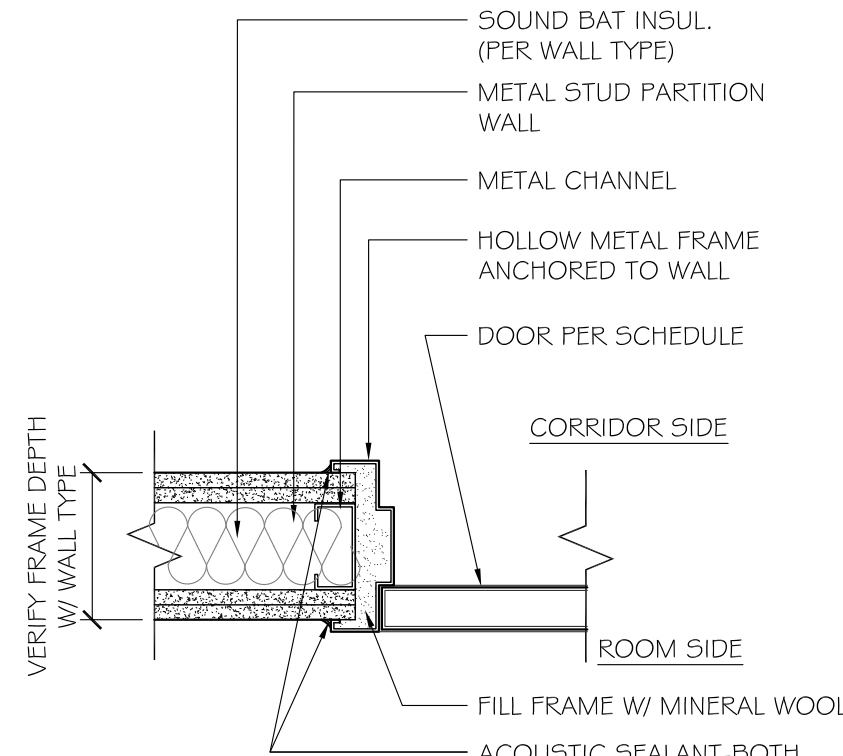
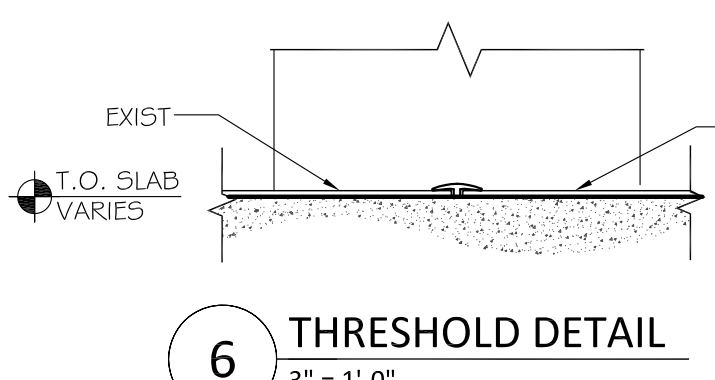
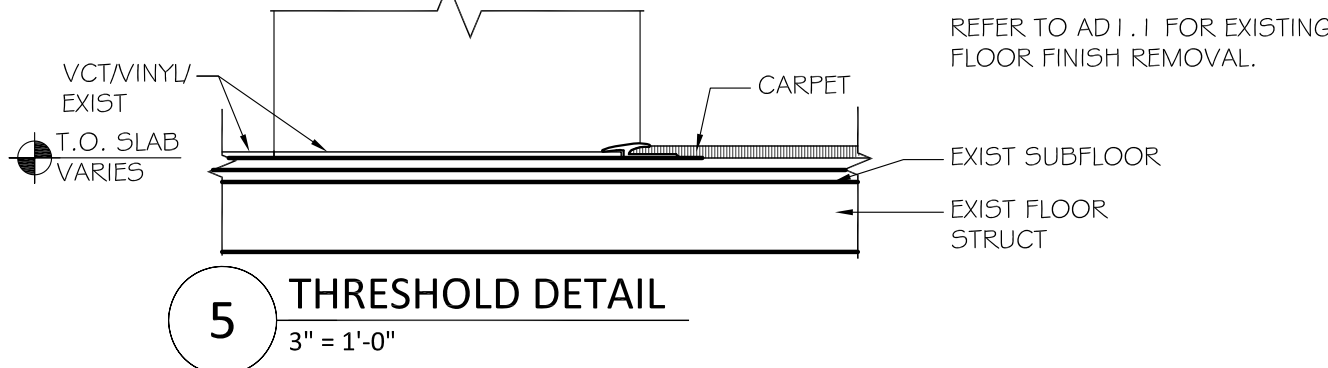
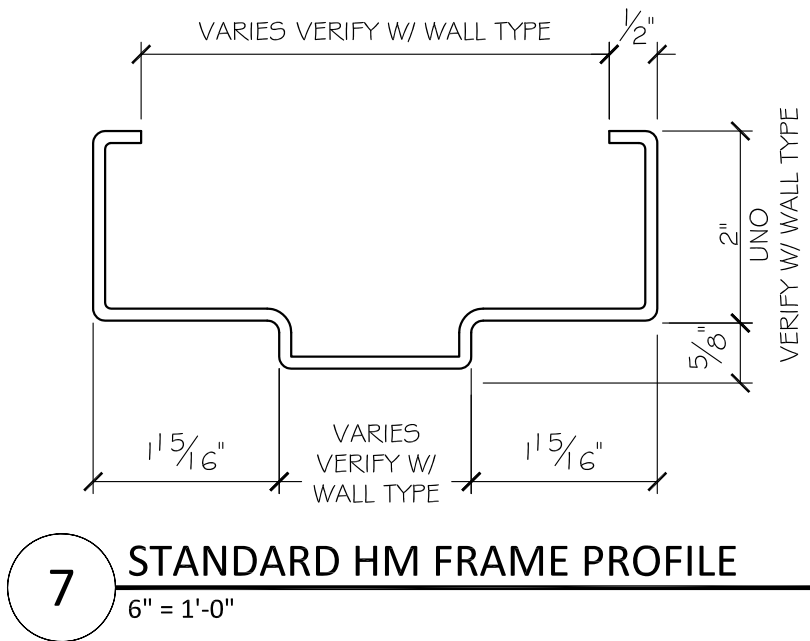
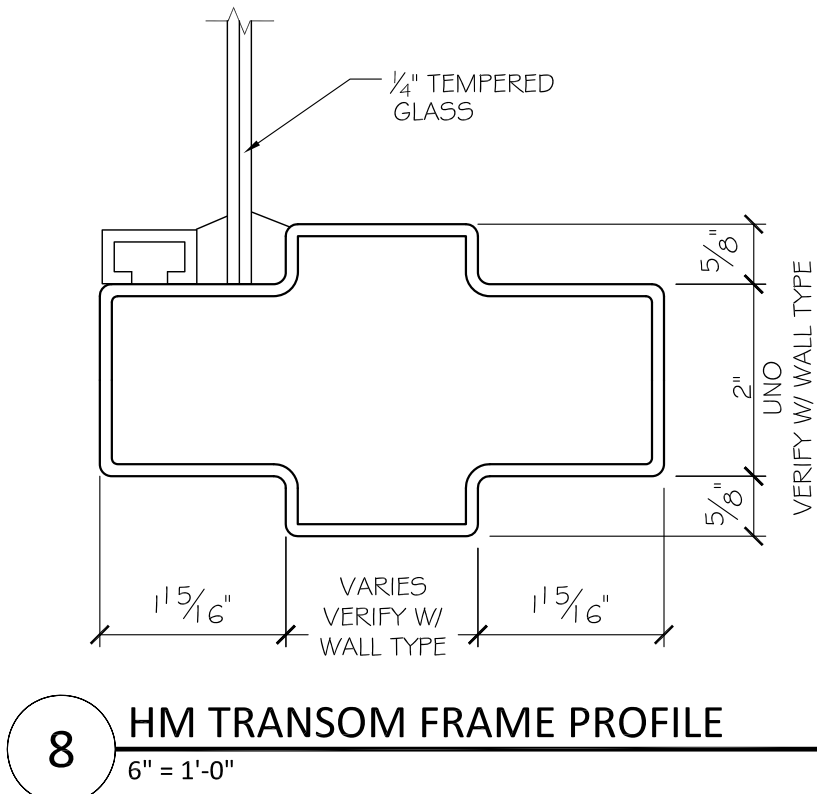
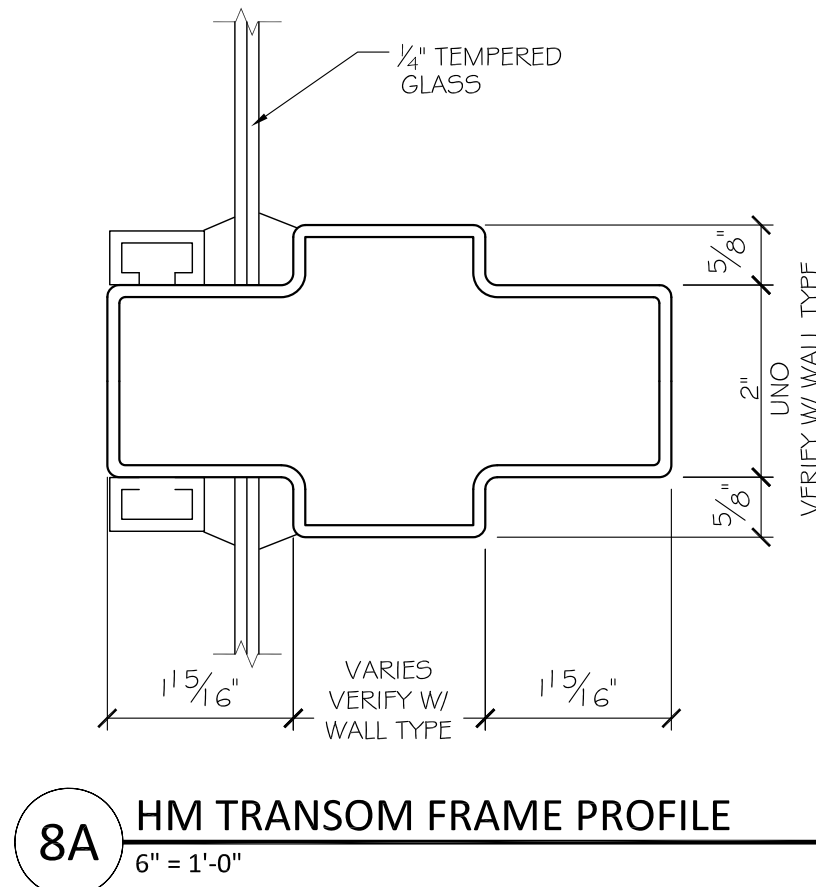
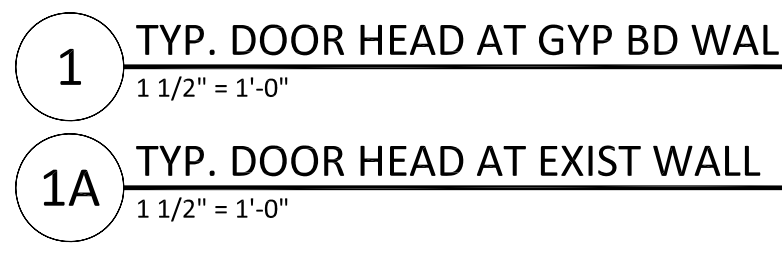
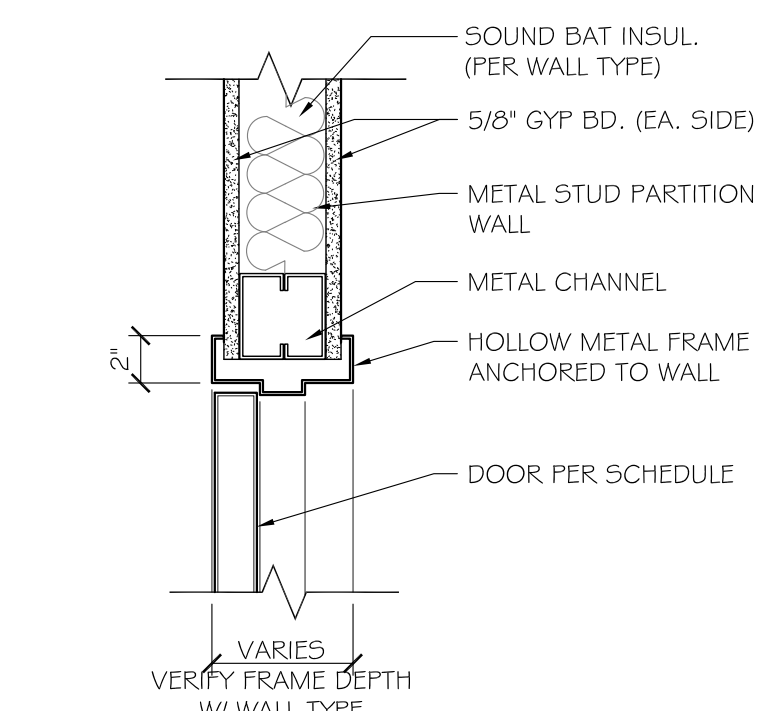
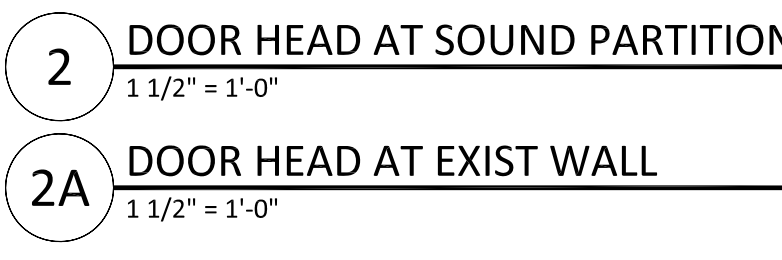
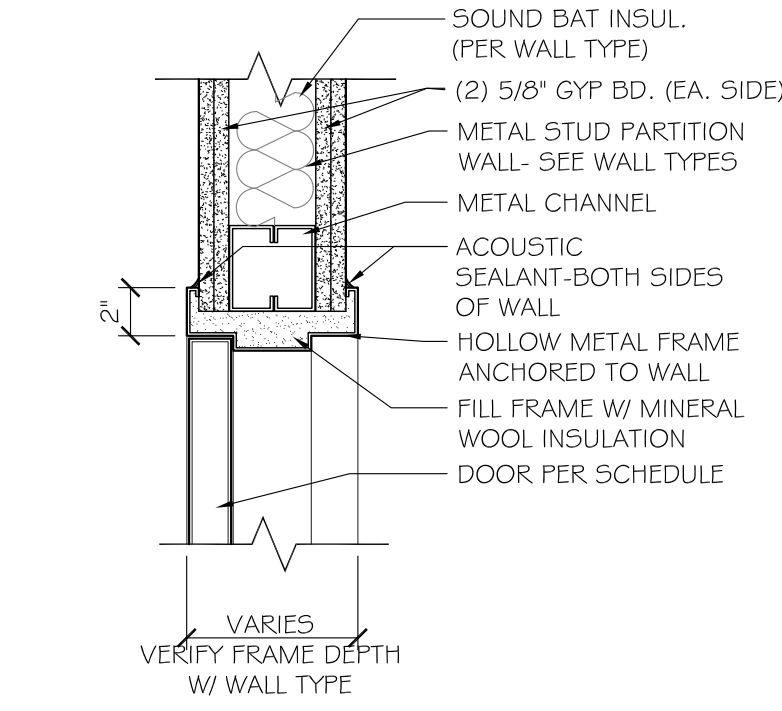
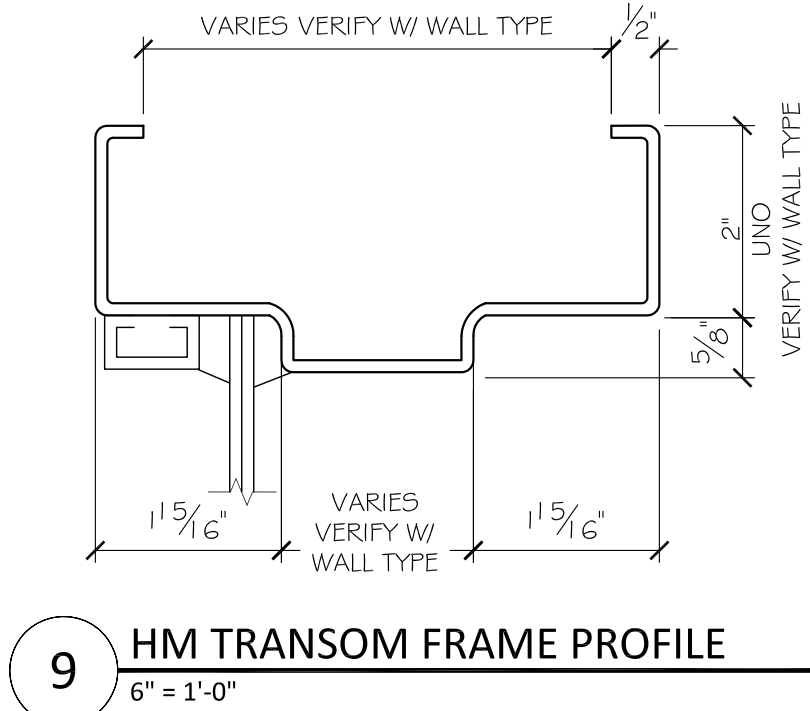
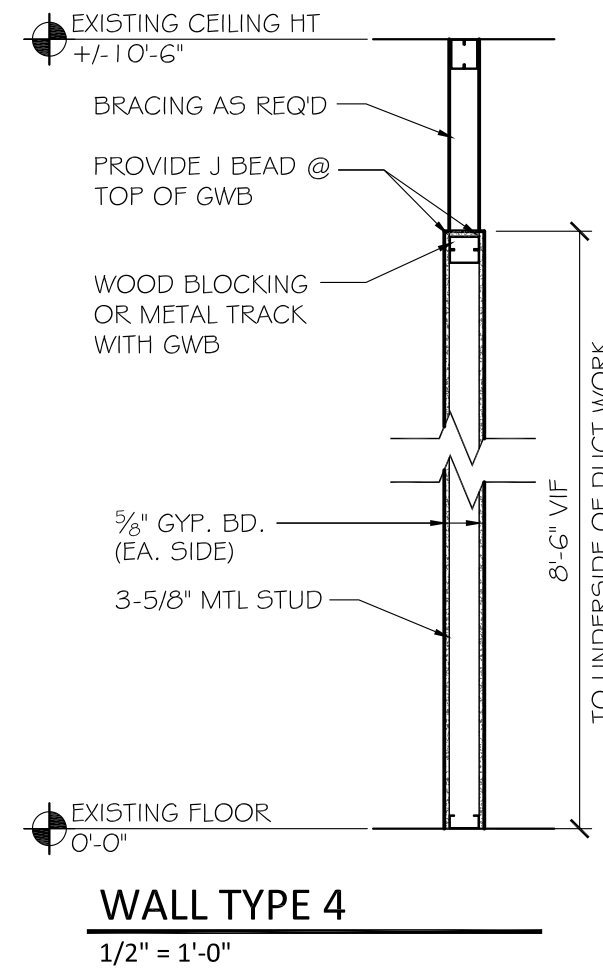
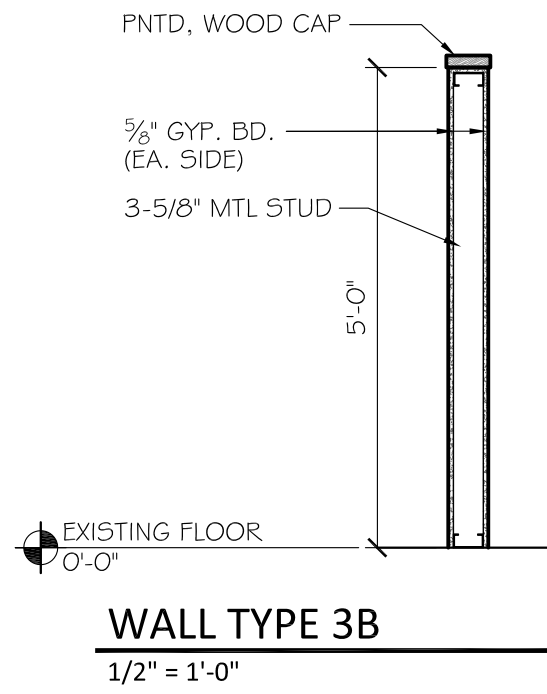
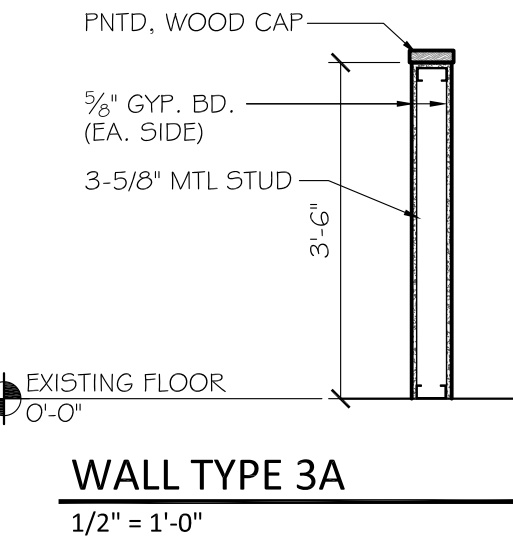
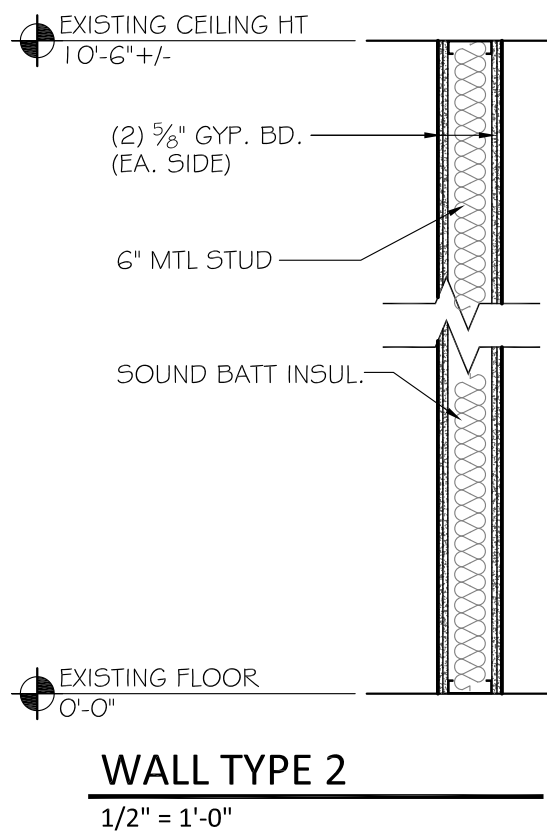
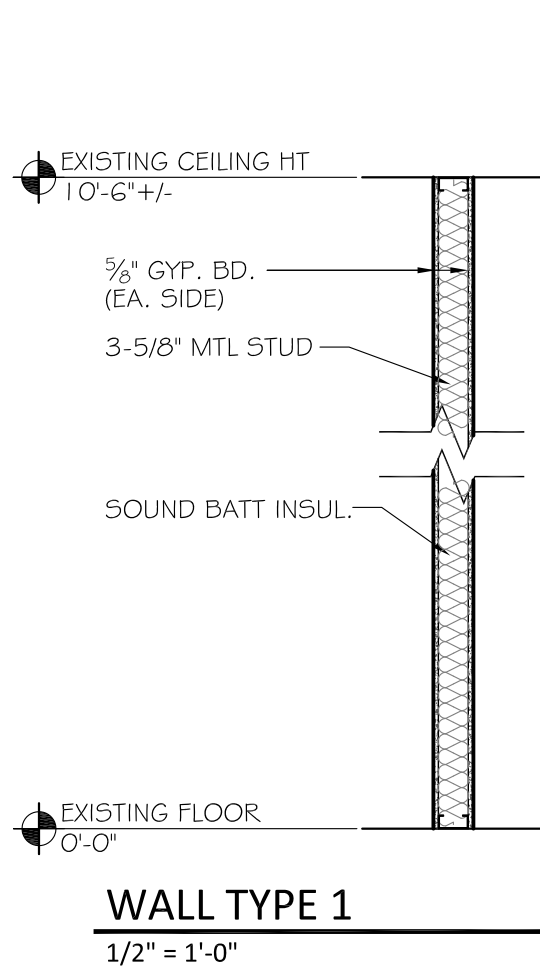
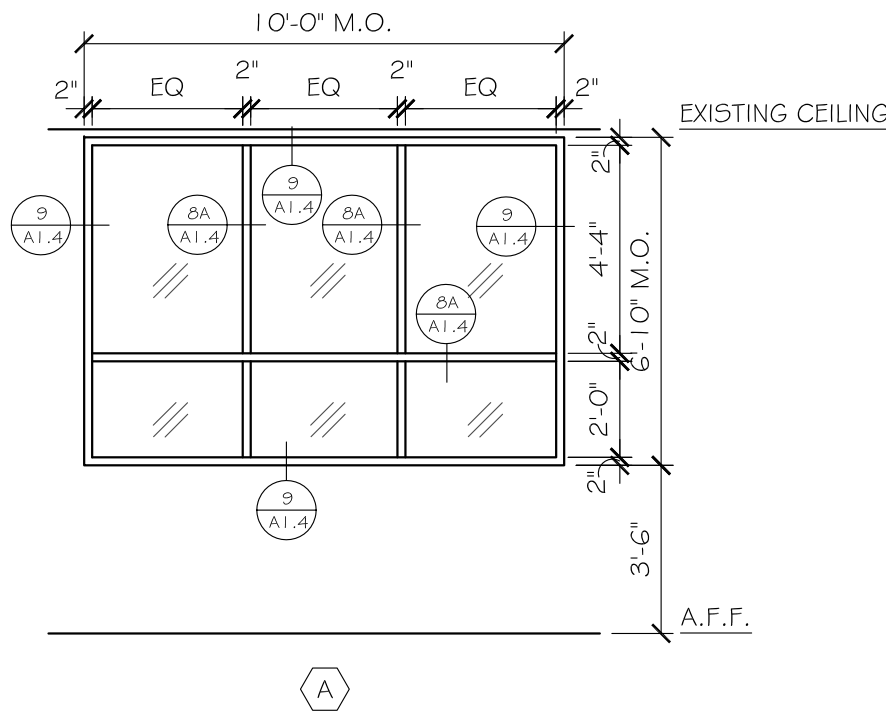
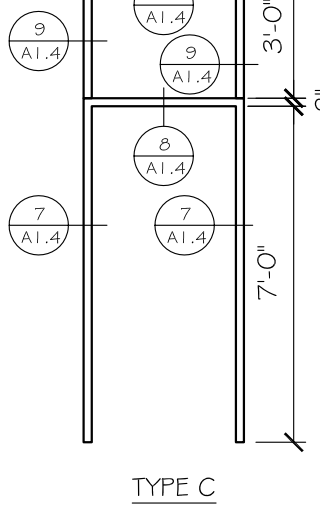
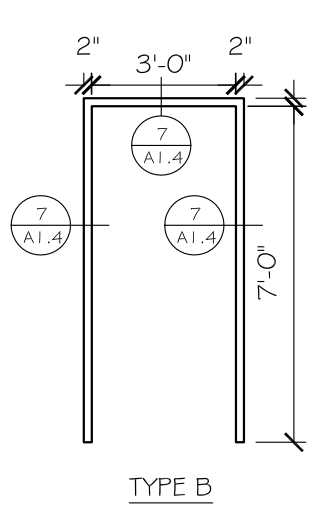
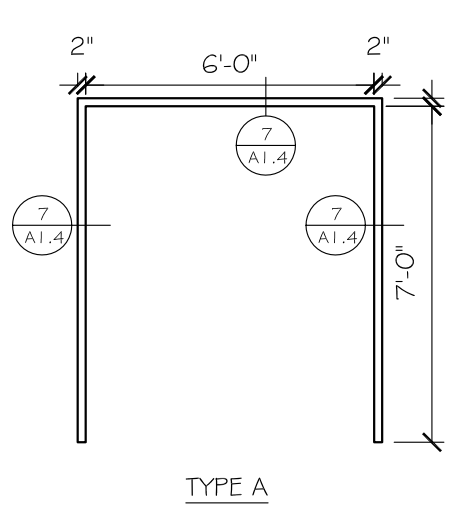
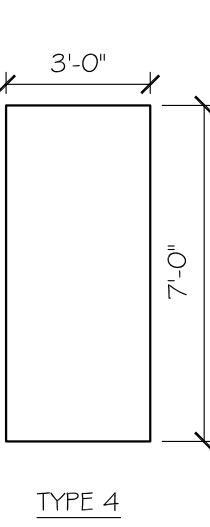
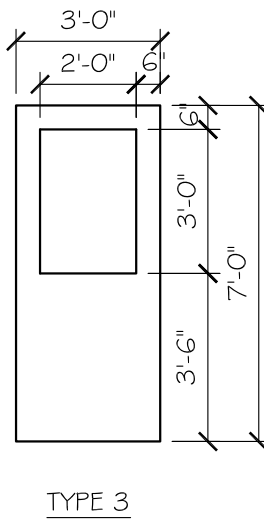
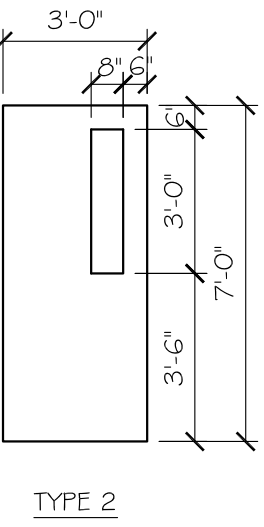
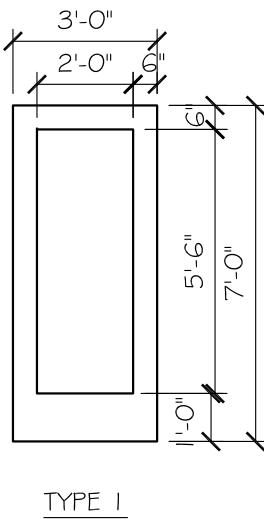
NOTES:
1. ALL NEW PIPING AND DUCTWORK TO BE PAINTED
2. TOUCH UP PAINT TO MATCH EXISTING AT ALL NEW EQUIPMENT AND AREAS DISTURBED IN ROOMS NOT TO RECIEVE PAINT.
3. NEW DUCTWORK AND EXPOSED CONDUIT IN ROOMS NOT TO RECIEVE PAINT SHALL BE PAINTED TO MATCH EXISTING.

DOOR SCHEDULE									
#	TO	LOCATION	WIDTH	HEIGHT	MATERIAL	THICKNESS	TYPE	FRAME	DETAILS
001	RECEPTION	CORRIDOR	3'-0"	7'-0"	WOOD	1-3/4"	3	HM	B 2A 4A 5
002	CONFERENCE	RECEPTION	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	B 1 3 -
003	HR DIRECTOR	RECEPTION	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	B 1 3 -
004	ASST SUPERINTENDENT	RECEPTION	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	B 1A 3A -
005	ASST SUPERINTENDENT	STAFF LOUNGE	3'-0"	7'-0"	WOOD	1-3/4"	4	HM	B 1 3 5
006	COPY ROOM	CORRIDOR	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	B 2A 4A 5
007	RECEPTION	GRANT	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	B 1 3 -
008	CONFERENCE	RECEPTION	3'-0"	7'-0"	WOOD	1-3/4"	3	HM	B 1 3 -
009	DIRECTOR	RECEPTION	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	C 1 3 -
010	OFFICE	OPEN OFFICE	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	C 1 3 -
011	OFFICE	OPEN OFFICE	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	C 1 3 -
012	GENERAL OFFICE	OPEN OFFICE	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	B 1 3 5
013	STAIRS	GENERAL OFFICE	3'-0"	7'-0"	WOOD	1-3/4"	2	HM	B 1A 3A 5
014	GENERAL OFFICE	FILES	3'-0"	7'-0"	WOOD	1-3/4"	4	HM	B 1 3 5
015	CORRIDOR	WAITING	6'-0"	7'-0"	WOOD	1-3/4"	1	HM	A 1 3 5
ALTERNATE #1									
016	CORRIDOR	RECEPTION	3'-0"	7'-0"	WOOD	1-3/4"	1	HM	B 2A 4A 5 04 -

DOOR SCHEDULE NOTES
1. GO TO VERIFY THICKNESSES OF ALL EXISTING WALLS AND DOORS, AND SIZE OF ALL OPENINGS.
2. GC TO MATCH DOOR SIZE WITH EXISTING DOOR SIZE. VERIFY IN FIELD.

WINDOW SCHEDULE									
#	ROUGH OPENING		STYLE	MATERIAL	ELEVATION	HEAD	JAMB	SILL	COMMENTS
A	10'-0"	6'-10"	FIXED	HM	A	9/A1.4	8A&9/A1.4	9/A1.4	NONE

WINDOW SCHEDULE NOTES
1. GC TO VERIFY THICKNESSES OF ALL EXISTING WALLS AND SIZE OF ALL OPENINGS.
2. LITE PATTERNS AS SHOWN ON WINDOW TYPE ELEVATIONS
3. DETAILS REFER TO SHEET A-1.4 UNLESS OTHERWISE NOTED.
4. ALL WINDOWS TO BE FACTORY PRIMED ON INTERIOR FOR FIELD PAINTING.





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CONSULTANT:

STAMP:

REVISIONS

NO.	DATE:

6TH FLOOR OFFICE RENOVATION
ARLINGTON HIGH SCHOOL
869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476

TITLE:
SCHEDULES,
TYPES &
DETAILS

JOB NUMBER:
12-15

DRAWN BY:
MED

CHECKED BY:
PJT

DATE:
March 27, 2013

SCALE:
AS NOTED

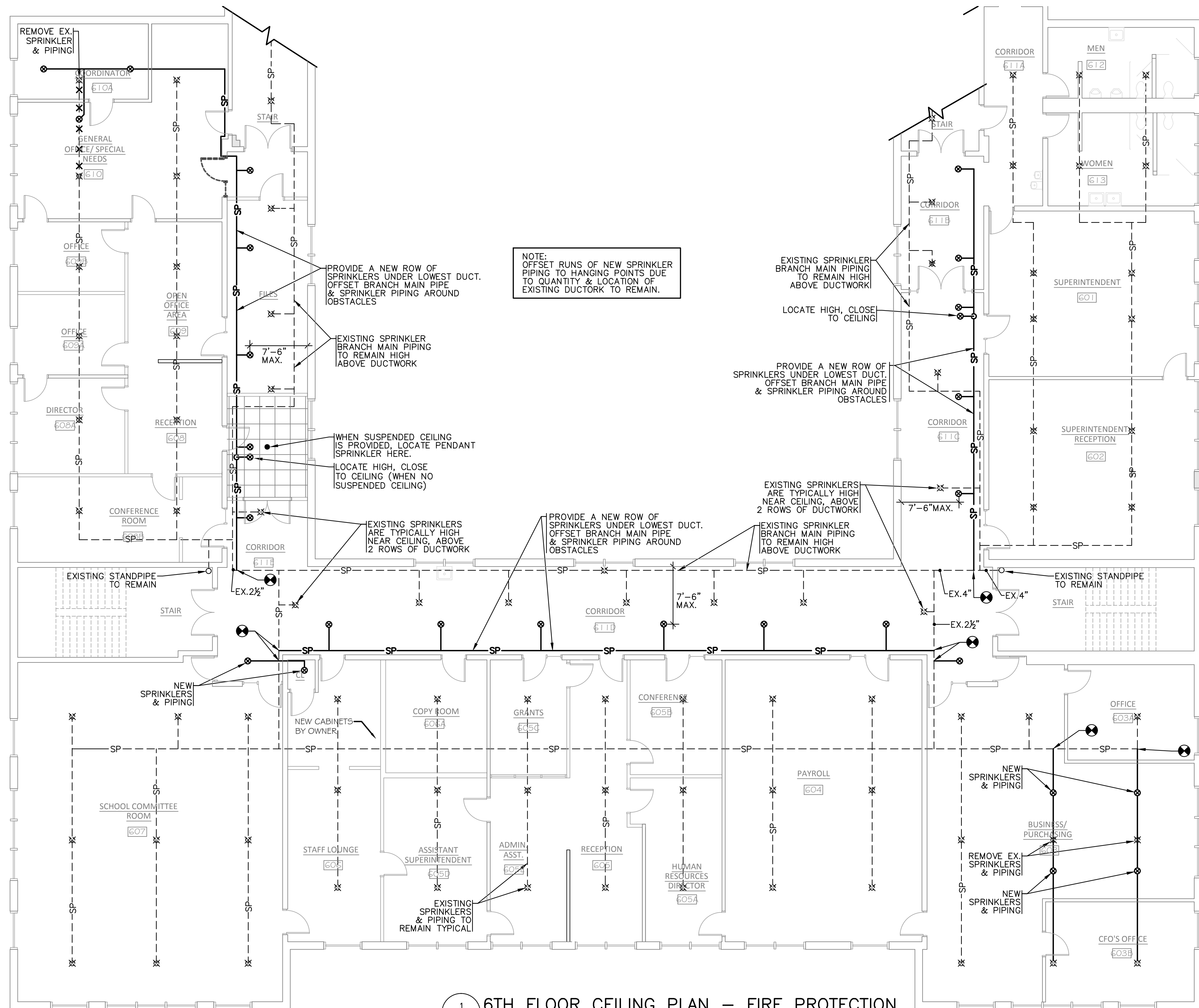
SHEET NO:

A1.4

SYMBOL	ABBREV	DESCRIPTION
	NEW	NEW WORK (DARK)
	EX	EXISTING WORK (LIGHT)
	F	FIRE LINE ABV. GRADE
	SP	SPRINKLER LINE (WET)
	D	SPRINKLER LINE (DRY)
	▲ EC	SIDEWALL SPRINKLER HEAD EXTENDED COVERAGE
	● D	SIDEWALL SPRINKLER HEAD
	● EC	PENDANT SPRINKLER HEAD EXTENDED COVERAGE
	●	PENDANT SPRINKLER HEAD
	⊗	EXPOSED UPRIGHT SPRINKLER HEAD
	▲ D	DRY SIDEWALL SPRINKLER HEAD
	● D	DRY PENDANT SPRINKLER HEAD IN CEILING
	⊗	DRY EXPOSED UPRIGHT SPRINKLER HEAD
	● D	DRY CONCEALED PENDANT SPRINKLER HEAD
	⊗	EXISTING SPRINKLERHEAD TO REMAIN
	DP,DN	PIPE DROP OR DOWN
	UP	PIPE RISE OR UP
		TEE LOOKING DOWN
		CAP ON END OF PIPE
	CV	CHECK VALVE
	SCV	SUPERVISED CONTROL VALVE
	FS	FLOW SWITCH
	TYP.	TYPICAL
	AFF	ABOVE FINISHED FLOOR
	PC	PLUMBING CONTRACTOR
	FPC	FIRE PROTECTION CONTRACTOR
	GC	GENERAL CONTRACTOR
	HVAC	HEAT, VENT & AIR COND. CONTRACTOR
	EC	ELECTRICAL CONTRACTOR
	EXP	EXPOSED
	SCVA	SPRINKLER FLOOR CONTROL VALVE ASSEMBLY

NOTE: NOT ALL SYMBOLS LISTED ARE APPLICABLE TO THIS PROJECT.

1. THE FIRE PROTECTION DRAWINGS ARE DIAGRAMMATIC AND ARE TO BE USED FOR THE PURPOSE OF ESTABLISHING GENERAL LOCATIONS OF PIPING RUNS, SIZES OF PIPING, AND QUANTITIES OF FIXTURES AND EQUIPMENT TO BE FURNISHED HEREIN. REFER TO ARCHITECTURAL DRAWINGS FOR DIMENSIONS FOR EXACT LOCATIONS OF ALL SPRINKLER HEADS, AND EQUIPMENT, INCLUDING MOUNTING HEIGHTS. IN THE EVENT OF CONFLICT OR IF DIMENSIONS ARE NOT SHOWN, OBTAIN FIELD DIRECTIVE FROM THE ARCHITECT AS TO THE LOCATIONS OF ALL VISIBLE EQUIPMENT.
2. REFER TO ARCHITECTURAL REFLECTED CEILING PLANS FOR CEILING HEIGHTS AND LAYOUTS. REFER TO THE RESPECTIVE HVAC AND ELECTRICAL DRAWINGS FOR LIGHTING, DIFFUSER AND REGISTER LAYOUTS IN CEILINGS AND FOR PIPING, DUCTWORK AND EQUIPMENT AT CEILINGS FOR COORDINATION PURPOSES. IN THE EVENT OF CONFLICT OR IF DIMENSIONS ARE NOT SHOWN, OBTAIN FIELD DIRECTIVE FROM THE ARCHITECT AS TO THE LOCATIONS OF ALL VISIBLE EQUIPMENT.
3. THE SPRINKLER CONTRACTOR SHALL PROVIDE AS PART OF THIS CONTRACT ALL SPRINKLERS BELOW FLOOR OBSTRUCTIONS 48" AND LARGER AS REQUIRED BY NFPA 13, 8.6.5.3.3. IT IS THE RESPONSIBILITY OF THE SPRINKLER CONTRACTOR TO PROVIDE THE REQUIRED SPRINKLERS AND ALL ASSOCIATED PIPING, FITTINGS, HANGERS, ETC. FOR A COMPLETE INSTALLATION.
4. SPECIFIC ATTENTION IS DIRECTED TO THE REQUIREMENTS OF MBC 914.7, 3305.3, 3306.1, AND NFPA 241-2004 REGARDING THE MAINTENANCE OF FIRE PROTECTION SYSTEMS DURING CONSTRUCTION AND DEMOLITION. MAINTAIN THE SYSTEMS AS REQUIRED BY THESE STANDARDS AS A MINIMUM.
5. REFER TO NFPA 13 TABLE 8.3.2.5(a) FOR TEMPERATURE RATING OF SPRINKLERS BASED ON DISTANCE FROM HEAT SOURCES SUCH AS HEATING DUCTS, DIFFUSERS AND UNIT HEATERS.
6. THE SPRINKLER CONTRACTOR SHALL BE RESPONSIBLE FOR PLACING THE SPRINKLER SYSTEM BACK ON LINE AND OPERATIONAL AT THE END OF EACH WORKING DAY
7. PAY ALL COSTS ASSOCIATED WITH ACTIVATING & DEACTIVATING THE FIRE ALARM SYSTEM TO PERFORM THE SPRINKLER WORK.
8. SPRINKLER CONTRACTOR IS TO PROTECT EXISTING SPRINKLER PIPING AND HEADS TO REMAIN. CONTRACTOR IS TO FIX ALL LEAKS THAT OCCUR IN THE EXISTING SYSTEM AT NO. COST TO THE OWNER.

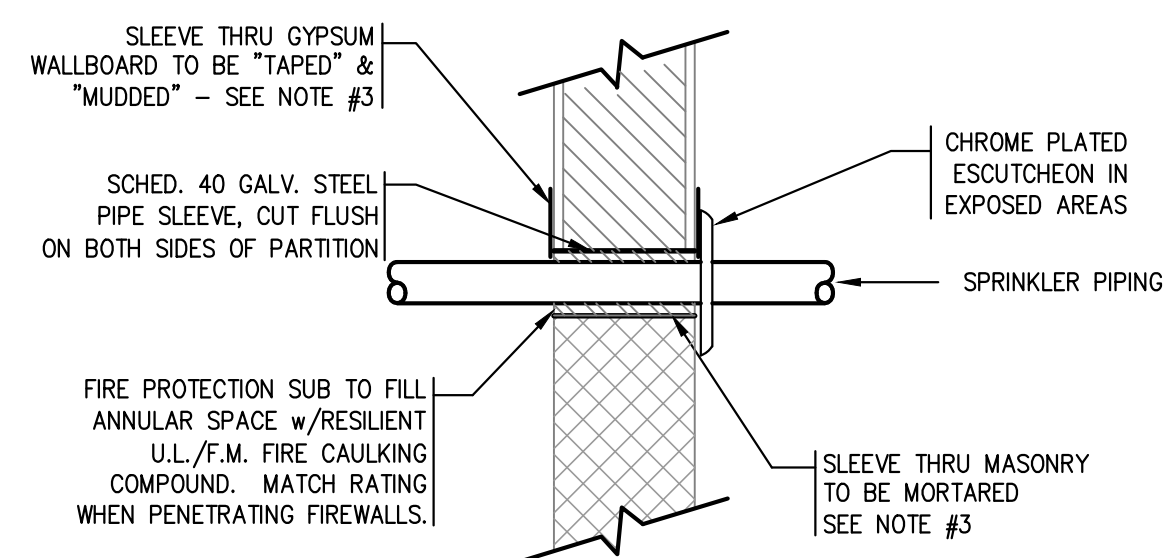


1 6TH FLOOR CEILING PLAN - FIRE PROTECTION
FP1.1 SCALE: 1/8" = 1'-0"

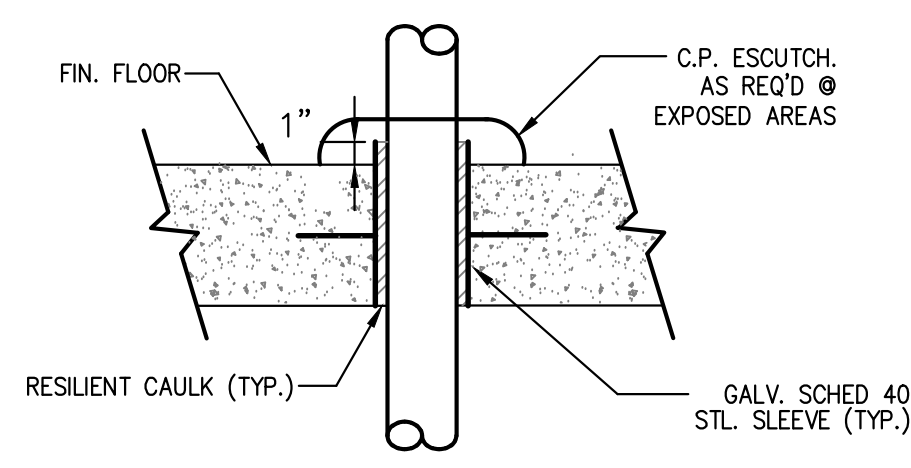
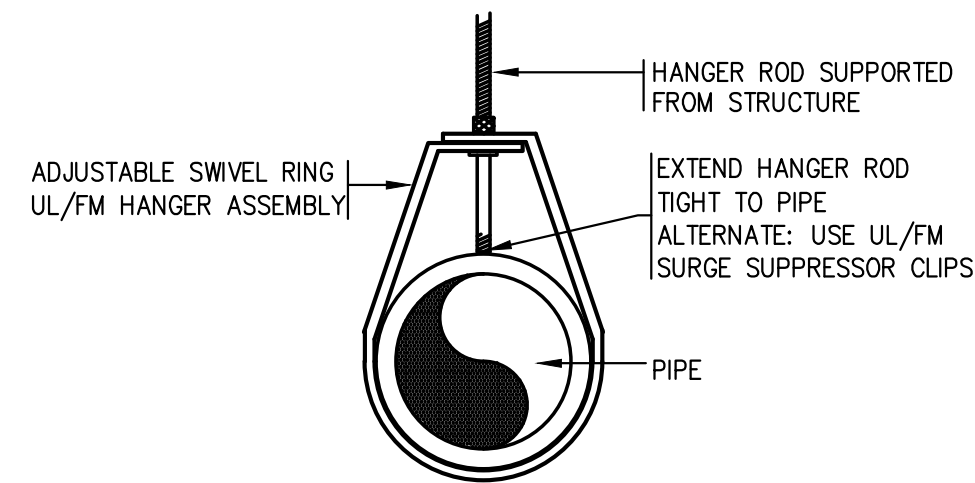
NOTE:

1. ALL PIPING PENETRATING ALL PARTITIONS, WHETHER FIRE OR SMOKE RATED OR NOT, CONCEALED OR EXPOSED, SHALL BE SLEEVED AS DETAILED.
2. WHERE CONC. WALLS, SLABS, ETC., ARE CORE DRILLED, INSTALL SLEEVE FLUSH WITH BOTH SIDES, CAULKED & LEADED IN PLACE.
3. REFER TO DIVISION 4 & 9 FOR PROCEDURES & METHODS OF PATCHING AROUND SLEEVES AT GYPSUM PLASTER & MASONRY. PROVIDE 2" CLEARANCE FOR DELINEATION OF RESPONSIBILITY.
4. SLEEVES SHALL BE SIZED TO PROVIDE MIN. 1" CLEARANCE BETWEEN PIPE O.D. & SLEEVE I.D. FOR PIPING 1/2" SIZE. PROVIDE 2" CLEARANCE BETWEEN PIPE O.D. & SLEEVE I.D. FOR PIPING 4" IN SIZE AND GREATER.

SLEEVE NOTES



THRU PARTITIONS & WALLS

THRU CONC. FLOORS

3 TYPICAL END-OF-LINE BRANCH
FP1.1 PIPE HANGER DETAIL

NOTE: TO BE USED AT ALL END-OF-LINE BRANCH
HANGERS THROUGHOUT PROJECT

ALTERNATE #1: ELIMINATE ALL SPRINKLER WORK.
ALTERNATE #2: DOES NOT APPLY TO WORK OF
THIS SECTION

6TH FLOOR OFFICE RENOVATION
ARLINGTON HIGH SCHOOL
869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476

TITLE:

6TH FLOOR
SPRINKLER
REVISIONS
FIRE PROTECTION

JOB NUMBER:
12-15

DRAWN BY:
RFI

CHECKED BY
CMG

DATE: March 27, 2013

SCALE:
AS NOTED

SHEET NO:

FP-1.1

ROOFTOP UNIT WITH ENERGY RECOVERY																																							
UNIT NO.	MANUF. NO.	AREA SERVED	MIN EER (W/O WHEEL)	TOTAL C.F.M.	O.A. C.F.M.	MAX. COIL VEL.	HEATING DATA										COOLING DATA								VAV CONTROL	SUPPLY AIR					RETURN AIR					ENERGY WHEEL			REMARKS
							ENT.	LVG.	HW COIL DATA		REHEAT DATA						ENT. COND.		LVG. COND.		M.B.H.		NO. OF	STEPS/		VFD	E.S.P.	H.P.	VOLT	PH.	R.P.M.	E.S.P.	H.P.	VOLT	PH.	R.P.M.	CAPACITY (MBH)		
F.P.M.	AIR°F	AIR°F	MBH	GPM	EWT	LWT	WPD	CAP MBH	LAT	EAT	D.B:°F	W.B:°F	D.B:°F	W.B:°F	SENS.	TOTAL	COMP.	COMP.	DRIVE	IN.W.G.									HEAT	SENSIBLE	LATENT								
RTU-1	RN-015-8-0-EB09	6TH FLR	11.3	4000	4000	500	41.1	88.4	216.0	20	200	180	2.6	78	65	58	82	69	54	53	113	183	2	2	YES	1.0	5	208	3	1760	1.0"	3	208	3	1760	203.8	134.87	69.0	—
ROOFTOP UNIT SELECTIONS FOR RTU-1 BASED ON "A9A0". ROOFTOP MANUF. SHALL PROVIDE VARIABLE FREQUENCY DRIVES FOR SUPPLY AND RETURN AIR FANS AND ENERGY RECOVERY WHEELS (IF APPLICABLE) FOR EACH UNIT IN ACCORDANCE WITH DIV. 260000 REQUIREMENTS. REFER TO DETAILS FOR ROOF CURB AND RTU MOUNTING INFORMATION.																																							

DUCTLESS COOLING UNIT SYSTEMS																		
UNIT NO.	MANUF. NO.	EVAP. LOCATION	COND. PUMP	EVAPORATOR UNITS						CONDENSER UNITS								REMARKS
				CFM	COOLING MBH	HTG MBH	V	PH	MAX. FUSE	TAG	MODEL	TONS	COOLING MBH	HTG MBH	V	PH	MAX. FUSE	
DCUe-1	PKFY 18	SUPERINTENDENT	CP-1	320	18	20.0	208	1	15.0	DCUc-1	PUHY-P288	24.0	288.0	323.0	208	3	MOD 1-60 MOD 2-50 MOD 3-35	SEE NOTES
DCUe-2	PKFY 24	SUPERINT. REC.	CP-1	570	24	27.0	208	1	15.0									
DCUe-3	PKFY 12	B/P OFFICE	CP-1	320	12	13.5	208	1	15.0									
DCUe-4	PKFY 15	BUSINESS PURCHASING	CP-1	320	15	17.0	208	1	15.0									
DCUe-5	PKFY 15	CFO'S OFFICE	CP-1	320	15	17.0	208	1	15.0									
DCUe-6	PKFY 15	BUSINESS PURCHASING	CP-1	320	15	17.0	208	1	15.0									
DCUe-7	PKFY 24	PAYROLL	CP-1	570	24	27.0	208	1	15.0									
DCUe-8	PKFY 06	SM CONFERENCE RM	CP-1	170	06	6.7	208	1	15.0									
DCUe-9	PKFY 12	HR DIRECTOR	CP-1	320	12	13.5	208	1	15.0									
DCUe-10	PKFY 06	GRANTS OFFICE	CP-1	170	06	6.7	208	1	15.0									
DCUe-11	PKFY 12	ADMIN ASSIST. RECPT.	CP-1	320	12	13.5	208	1	15.0									
DCUe-12	PKFY 12	ASSIST. SUPERINTEND.	CP-1	320	12	13.5	208	1	15.0									
DCUe-13	PKFY 12	STAFF LOUNGE	CP-1	320	12	13.5	208	1	15.0									
DCUe-14	PKFY 12	COORDINATOR	CP-1	320	12	13.5	208	1	15.0									
DCUe-15	PKFY 08	GEN OFF/SPEC. NEEDS	CP-1	170	08	9.0	208	1	15.0									
DCUe-16	PKFY 06	OFFICE	CP-1	170	06	6.7	208	1	15.0									
DCUe-17	PKFY 06	OFFICE	CP-1	170	06	6.7	208	1	15.0									
DCUe-18	PKFY 12	DIRECTOR	CP-1	320	12	13.5	208	1	15.0									
DCUe-19	PKFY 12	LG CONFERENCE RM	CP-1	320	12	13.5	208	1	15.0									
DCUe-20	PKFY 08	RECPT. OPEN OFFICE	CP-1	170	08	9.0	208	1	15.0									
DCUe-21	PKFY 30	SCHOOL COMM. RM	CP-1	710	30	34.0	208	1	15.0									
DCUe-22	PKFY 30	SCHOOL COMM. RM	CP-1	710	30	34.0	208	1	15.0									
DCUe-23	PKFY 30	SCHOOL COMM. RM	CP-1	710	30	34.0	208	1	15.0									
SELECTION BASED ON "MITSUBISHI". PROVIDE WIRED T-STAT, LOW AMBIENT CONTROL AND INTERNAL MOUNTED CONDENSATE PUMP OF MODEL LISTED ABOVE. CFM BASED ON FANS SET AT LOW SPEED. PROVIDE WITH AIR COOLED CONDENSING UNIT AS INDICATED IN THE SCHEDULE. ALL REFRIGERANT TUBING SHALL BE SIZED BY UNIT MANUFACTURER. PROVIDE ALL NECESSARY JOINT KITS, FITTINGS AND ACCESSORIES FOR A COMPLETE OPERATING SYSTEM PER MANUFACTURER'S RECOMMENDATIONS. PROVIDE NECESSARY EQUIPMENT FOR BMS INTERFACE. SYSTEM SHALL BE CAPABLE OF HEATING OR COOLING SYSTEM CHANGEOVER.																		
SYSTEM PUHY-P288 IS MADE UP OF 3 MODULES: MOD 1-PUHY 120, MOD 2-PUHY P96, MOD 3-PUHY P72. ELECTRICAL REQUIREMENTS BASED ON EACH MODULE.																		

DIFFUSERS			
NO.	SIZE	STYLE	REMARKS
A	SEE PLANS	530D	
B	SEE PLANS	AMX	
SELECTION BASED ON PRICE NOTE 1: REFER TO DRAWINGS FOR FLOW DIRECTION, SIZE, CFM AND QUANTITIES			

RETURN/EXH/ TRANSFER REGISTER(R/E)	
NO.	STYLE
1	530D
2	80D
SELECTION BASED ON "PRICE" NOTE #1: REFER TO DRAWINGS FOR THROW DIRECTION, SIZE & CFM AND QUANTITIES	

AIR CONDITIONING DESIGN DATA							
DESIGN AREA		SUMMER				WINTER	
		OUT		IN		OUT	IN
		D.B.	W.B.	D.B.	RH. %	D.B.	D.B.
ARLINGTON, MASSACHUSETTS		87	74	75	50	7.0	72

CONDENSATE PUMPS							
UNIT NO.	MANUF. NO.	SERVICE	G.P.H.	T.D.H. FT WATER	WATTS/HP	VOLT	PH.
CP-1	SI-30	DCUe	3.0	10'	50 W	120	1
CP-1 SELECTION BASED ON "SAUERMAN". PROVIDE OVERFLOW SAFETY SWITCH FOR EACH PUMP W/ ALARM. ALSO EACH PUMP SHALL BE FURNISHED WITH PROVISIONS FOR DIRECT CONNECTION (HARD WIRE) WITH PIGTAIL READY FOR CONNECTION BY ELECTRICAL CONTRACTOR.							

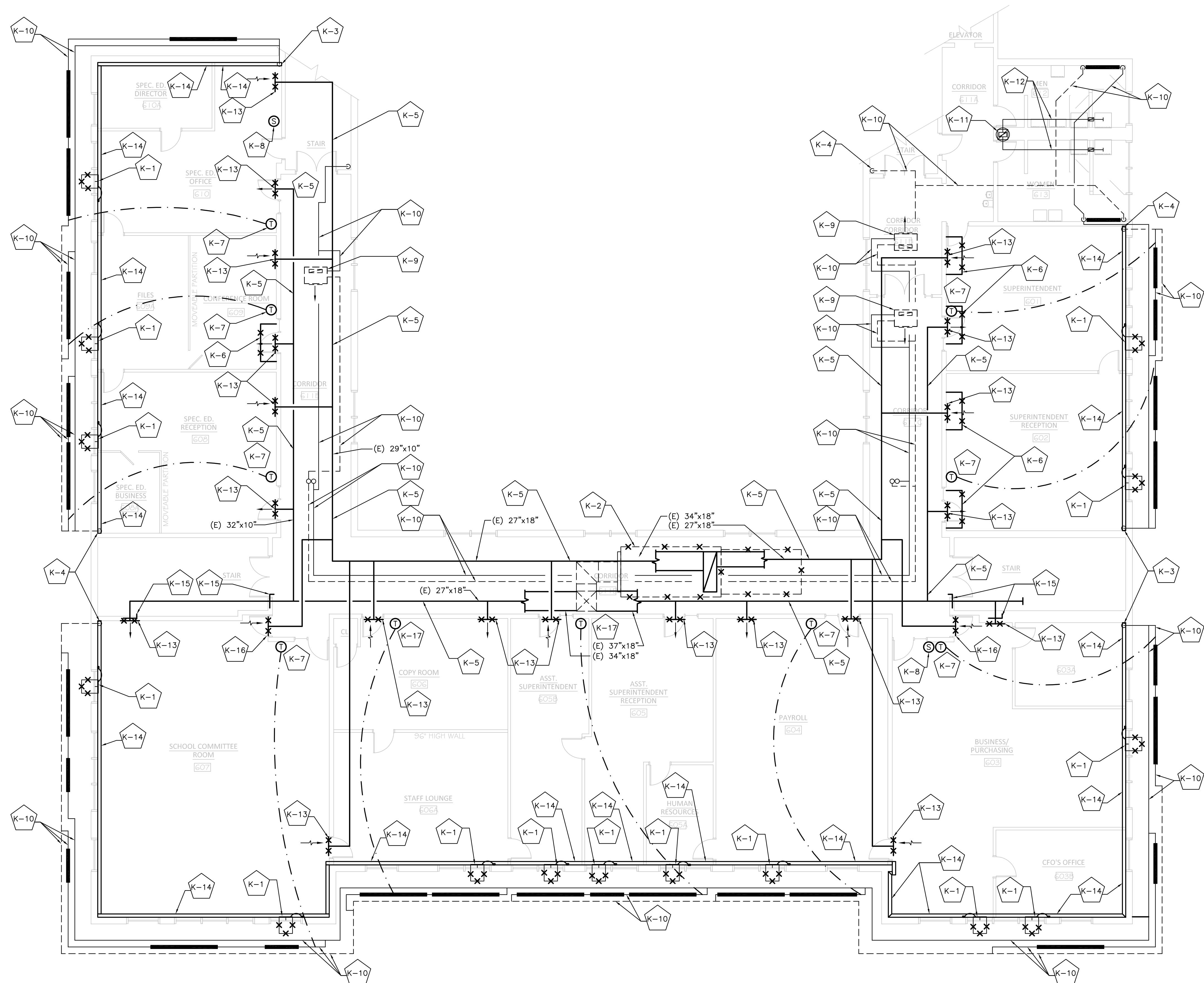
AIR COOLED CONDENSING UNITS (FOR ALTERNATE 1 ONLY)									
UNIT NO.	MANUF. NO.	SERVICE	ENT. D.B.	NOMINAL TONS	FANS NO./HP.	COMP. NO./TONS	VOLT/PH.	REFRIG CIRCUITS	REFRIG TYPE
ACC-1	TTA150	AHU-1	95	12.5	1/1	2/5.6	208/3	2	R410A
SELECTION BASED ON TRANE IF ALTERNATE NUMBER 1 IS ACCEPTED FOR THE PROJECT THE CONTRACTOR SHALL PROVIDE THIS EQUIPMENT AND PLACE ON ROOF. CONTRACTOR TO COORDINATE LOCATION ON ROOF WITH OWNER. UNIT SHALL BE MOUNTED ON 4x4 PT SLEEPERS IN ACCORNDACE WITH THE MANUFACTURER'S RECOMMENDATIONS. OWNER SHALL BE RESPONSIBLE FOR CONNECTING EQUIPMENT INTO EXISTING SYSTEM.									

GENERAL NOTES

- ALL PIPING AND DUCTWORK UNLESS DIMENSIONED IS SHOWN DIAGRAMATICALLY ONLY, EXACT LOCATION SHALL BE DETERMINED IN FIELD AFTER COORDINATING WITH OTHER WORK.
- FOR TYPICAL PIPING DIAGRAMS AND CONNECTIONS AT EQUIPMENT, SEE DETAIL DRAWINGS.
- EXACT LOCATION OF ALL CEILING DIFFUSERS, REGISTERS, AND GRILLES SHALL BE COORDINATED WITH LIGHTING FIXTURES. REFER TO REFLECTED CEILING PLAN.
- FOR DETAILS OF ROOF CURBS, FLASHING, PIPING, AND VENTS THRU ROOF REFER TO ARCHITECTURAL DRAWINGS.
- FOR LOCATION OF OPENINGS IN ROOF AND FLOORS REFER TO STRUCTURAL AND ARCHITECTURAL DRAWINGS.
- AUTOMATIC VENTS, VALVES, ETC. THAT MUST BE SERVICED SHALL BE LOCATED IN ACCESSIBLE POSITIONS.
- GENERAL CONTRACTOR SHALL PROVIDE CONCRETE BASES A 4" MINIMUM HEIGHT. LOCATION AND DIMENSIONS ARE APPROXIMATE.
- THIS CONTRACTOR SHALL PROVIDE REMOVABLE PANELS AT LOCATIONS WHERE ACCESS TO VALVES, DAMPERS, FIRE DAMPERS, ETC. ARE REQUIRED.
- ALL DUCTWORK SHALL HAVE JOINTS AND SEAMS FILLED WITH SEALANT FOR AIR TIGHT INSTALLATIONS.
- PROVIDE SWING JOINTS AT ALL PIPING TAKEOFFS FROM MAINS (MINIMUM OF 3 ELBOWS).
- ALL AIR VENTS SHALL BE INSTALLED WITH COCKS SUCH THAT VENTS CAN BE REMOVED WITHOUT DRAINING SUPPLY AND RETURN MAINS.
- PROVIDE DUCT ACCESS DOORS FOR ALL FIRE AND CONTROL DAMPERS LOCATED IN DUCTWORK RUNS.
- HVAC CONTRACTOR SHALL COORDINATE ALL WORK WITH PLUMBING AND ELECTRICAL CONTRACTORS.
- HVAC CONTRACTOR SHALL INFORM G.C. AS TO THE LOCATION AND SIZE OF ALL ACCESS PANELS.
- ALL DOOR GRILLES SHALL BE BY G.C.
- ALL SUPPORT STEEL UNLESS SHOWN ON STRUCTURAL DRAWINGS SHALL BE PROVIDED BY H.V.A.C. CONTRACTOR.
- ALL DUCT ELBOWS SHALL BE LONG RADIUS (R=1.5), OR SQUARE TYPE WITH DOUBLE THICKNESS TURNING VANES.
- DUCT SMOKE DETECTORS INDICATED ARE TO BE PROVIDED & WIRED BY ELECTRICAL CONTRACTOR AND INSTALLED BY THIS CONTRACTOR. FIRE ALARM INTERLOCK BY E.C.
- FOR ALL CONNECTIONS TO BUILDING STEEL REFER TO STRUCTURAL DRAWINGS.
- TOTAL DYNAMIC HEAD AND STATIC PRESSURE INDICATED IN THE SCHEDULES IS BASED ON ENGINEERING ANALYSIS AND MAY NOT NECESSARILY MATCH ACTUAL INSTALLED CONDITIONS. THIS CONTRACTOR SHALL PROVIDE REQUIRED SHEAVES, BELTS AND DRIVES TO MEET VOLUME FLOW CHARACTERISTICS SPECIFIED.
- PROVIDE 4" FLEXIBLE CONNECTION AT EACH DUCT CONNECTION TO FAN OR AIR HANDLING UNIT.
- THE MANUFACTURER LISTED IN THE SCHEDULES REFLECTS THE BASIS OF DESIGN AS INDICATED ON THE CONTRACT DRAWINGS AND IS NOT INTENDED TO SUGGEST THE REQUIRED PROVIDER. REFER TO THE SPECIFICATIONS FOR A COMPLETE DESCRIPTION OF EACH PRODUCT REQUIRED AND REFERENCE "OR EQUAL" REQUIREMENTS.
- PROVIDE ISOLATION VALVES AT EACH DUCTLESS COOLING UNIT INDOOR EVAPORATOR FOR SERVICING PURPOSES.
- PROVIDE ALL DUCTWORK TRANSITIONS, FITTINGS AND OFFSETS REQUIRED FOR NEW DUCTWORK CONNECTIONS. TYPICAL FOR ALL NEW DUCTWORK CONNECTIONS AS WELL.
- PROVIDE DUCT CONNECTIONS FROM DUCT MOUNTED SUPPLY AND RETURN GRILLES TO NEW OR EXISTING DUCTWORK. DUCTWORK SHALL BE FULL WIDTH AND HEIGHT OF GRILLE.

LEGEND


SYMBOL	ABBREV	DESCRIPTION
	DIA	DIAMETER
	HHWS	HEATING HOT WATER SUPPLY
	HHWR	HEATING HOT WATER RETURN
	RL	REFRIGERANT LIQUID
	RS	REFRIGERANT SUCTION
	D	DRAIN
		GATE VALVE
		GLOBE VALVE
		CHECK VALVE
		BUTTERFLY VALVE
		BALL VALVE
		THREE-WAY CONTROL VALVE
		TWO-WAY CONTROL VALVE
		FLOW METERING ELEMENT
		CIRCUIT SETTER VALVE
		TRIPLE DUTY VALVE
		DRAIN VALVE
		PLUG VALVE
		SAFETY VALVE
		STRAINER
		UNION
		AUTOMATIC AIR VENT
		PIPE UP (ELBOW)
		PIPE DOWN (ELBOW)
		PRESSURE GAGE WITH GAGE COCK
		THERMOMETER
		BRANCH CONNECTION OUT OF TOP
		BRANCH CONNECTION OUT OF BOTTOM
		BRANCH CONNECTION OUT OF SIDE
		CAP ON END OF PIPE
		FLOW IN DIRECTION OF ARROW
		THERMOSTAT
		SUPPLY AIR DUCT SECTION
		RETURN/EXHAUST AIR DUCT SECTION
		SUPPLY AIR
		RETURN/EXHAUST AIR
	MD	MOTORIZED DAMPER
	FD	FIRE DAMPER
	VD	VOLUME DAMPER
	BD	BACKDRAFT DAMPER
		SMOKE DETECTOR
		BMS SENSOR
		THERMOSTAT
		CONNECT NEW TO EXISTING
		LIMIT OF DEMOLITION
		KEY NOTE (DEMOLITION DRAWINGS)
		TO BE DEMOLISHED
	AFF	ABOVE FINISHED FLOOR
	ATC	AUTOMATIC TEMP. CONTROL
	ATC	BUILDING MANAGEMENT SYSTEM
	CFM	CUBIC FEET PER MINUTE
	DG	DOOR GRILLE
	EAT	ENTERING AIR TEMPERATURE
	EF	EXHAUST FAN
	EWT	ENTERING WATER TEMPERATURE
	ESP	EXTERNAL STATIC PRESSURE
	ETR	EXISTING TO REMAIN
	EDB	ENTERING DRY BULB
	EWB	ENTERING WET BULB
	FC	FAN COIL
	GC	GENERAL CONTRACTOR
	HVAC	HEATING, VENTILATING AND AIR COND.
	HP	HORSEPOWER
	LAT	LEAVING AIR TEMPERATURE
	LDB	LEAVING DRY BULB
	LWB	LEAVING WET BULB
	LWT	LEAVING WATER TEMPERATURE
	MANUF	MANUFACTURER
	NTS	NOT TO SCALE
	OA	OUTSIDE AIR
	PC	PLUMBING CONTRACTOR
	PD	PRESSURE DROP
	PH	PHASE
	RA	RETURN AIR
	RH	ROOF HOOD
	RHC	REHEAT COIL
	RTU	ROOF TOP UNIT
	SA	SUPPLY AIR OR SOUND ATTENUATOR
	TBR	TO BE REMOVED
	TDH	TOTAL DYNAMIC HEAD
	TSP	TOTAL STATIC PRESSURE
	TYP	TYPICAL
	UD	UNDERCUT DOOR
	UH	UNIT HEATER (CABINET OR HORIZONTAL)
	UV	UNIT VENTILATOR
	V	VOLTS
	VEL	VELOCITY




- DEMOLITION KEY NOTES:**
- K-1 EXISTING WINDOW AIR CONDITIONING UNIT TO BE REMOVED BY OWNER.
 - K-2 **BASE BID:** EXISTING JACKSON CHURCH H&V UNIT TO BE REMOVED INCLUDING ALL ASSOCIATED APPURTENANCES. ROOF PENETRATION TO BE REUSED WITH NEW UNIT. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION. **ALTERNATE 2:** REFER TO ROOF PLAN FOR ADDITIONAL INFORMATION ON DEMOLITION BASED ON ALTERNATE.
 - K-3 EXISTING HEATING HOT WATER SUPPLY (HHWS) DN TO REMAIN.
 - K-4 EXISTING HEATING HOT WATER RETURN (HHWR) DN TO REMAIN
 - K-5 EXISTING DUCTWORK TO REMAIN.
 - K-6 EXISTING METAL DEFLECTOR ON EXISTING GRILLES TO BE REMOVED.
 - K-7 EXISTING PNEUMATIC THERMOSTATS TO REMAIN.
 - K-8 EXISTING WALL MOUNTED BMS SYSTEM ROOM TEMPERATURE SENSOR TO BE REPLACED IN KIND BY ORIGINAL EQUIPMENT PROVIDER (AEM CONTROLS). EXISTING HOT WATER UNIT HEATERS SERVING CORRIDORS TO REMAIN.
 - K-9 EXISTING HOT WATER UNIT HEATERS SERVING CORRIDORS TO REMAIN.
 - K-10 EXISTING HEATING HOT WATER PIPING AND ALL RELATED APPURTENANCES SUCH AS HANGERS, INSULATION AND VALVES TO REMAIN.
 - K-11 EXISTING TOILET ROOM EXHAUST SYSTEM TO REMAIN.
 - K-12 EXISTING DUCTWORK AND EXHAUST GRILLES TO REMAIN
 - K-13 EXISTING WALL MOUNTED SUPPLY AND RETURN GRILLES TO BE REMOVED. REFER TO NEW WORK PLANS FOR ADDITIONAL INFORMATION.
 - K-14 EXISTING WALL MOUNTED FIN TUBE PIPING AND HANGERS TO REMAIN.
 - K-15 EXISTING FIRE DAMPER LOCATED IN EXISTING SUPPLY AIR DUCT AT STAIRWAY PENETRATION TO REMAIN.
 - K-16 EXISTING RETURN GRILLE TO BE REMOVED. VERIFY IN FIELD SIZE OF EXISTING GRILLE FOR SAME SIZE REPLACEMENT OF NEW GRILLE W/ DAMPER.
 - K-17 EXISTING PNEUMATIC THERMOSTAT MOUNTED ON EXISTING INTEGRAL CLASSROOM PANEL. INTEGRAL CLASSROOM PANEL REMOVED BY ELECTRICAL CONTRACTOR. EXISTING THERMOSTAT MOUNTED ON PANEL SHALL BE SALVAGED FOR REUSE ONCE CLASSROOM PANEL HAS BEEN REMOVED. INSTALL IN THE SAME APPROXIMATE LOCATION. HVAC CONTRACTOR SHALL COORDINATE WITH ELECTRICAL CONTRACTOR.

DEMOLITION GENERAL NOTE:

1. EXISTING WALL MOUNTED THERMOSTATS SERVING PERIMETER FIN TUBE RADIATION TO REMAIN. WHERE CLASSROOM BOARD ARE BEING REMOVED BY ELECTRICAL CONTRACTOR, THERMOSTAT SHALL BE REMOVED AND RE-INSTALLED ON WALL IN THE SAME APPROXIMATE LOCATION. CONFIRM WITH ARCHITECT CLASSROOM BOARD REMOVAL IMPACTING EXISTING THERMOSTATS.



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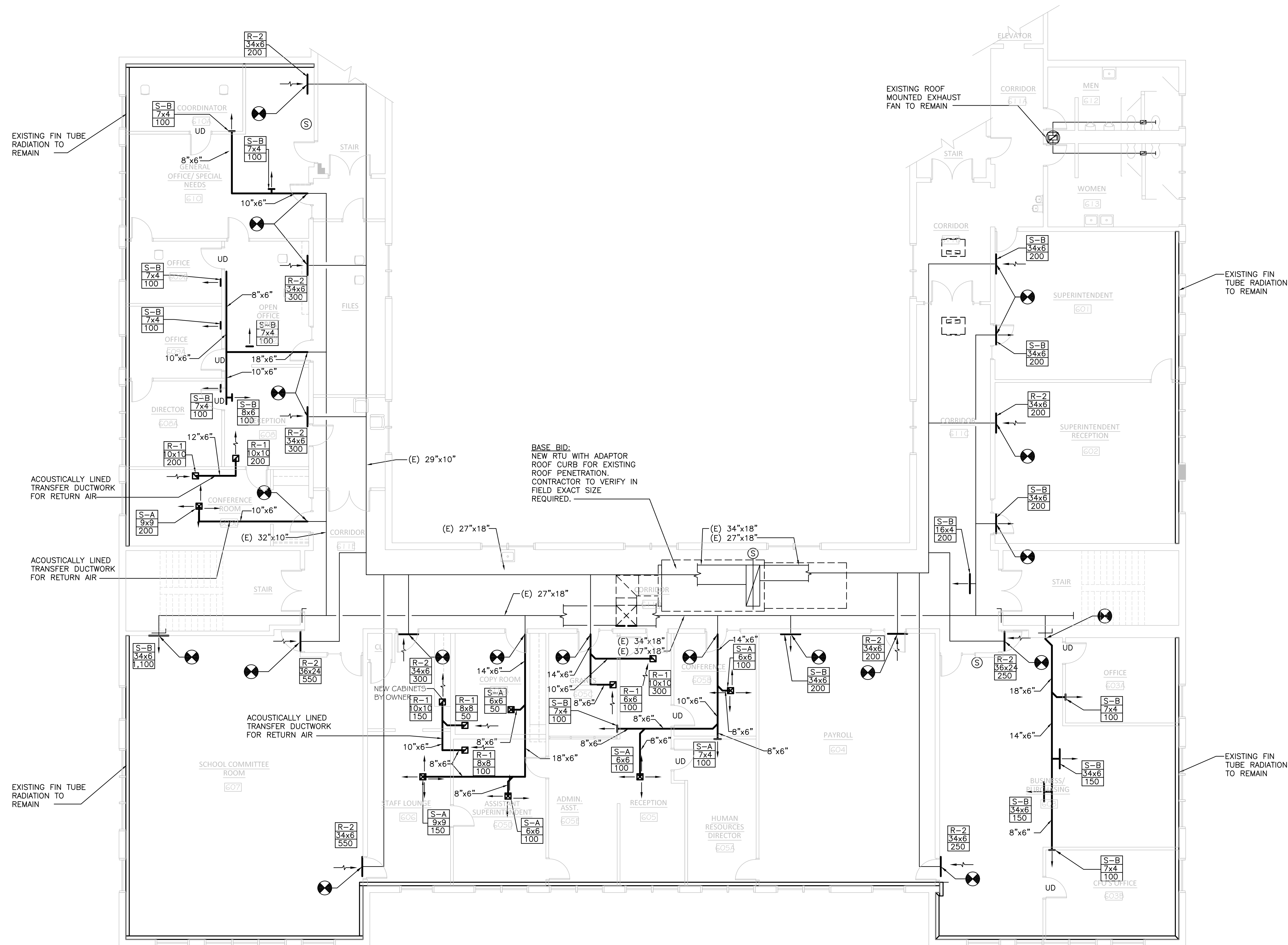
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REVISIONS	
NO.	DATE

**6TH FLOOR OFFICE RENOVATION
ARLINGTON HIGH SCHOOL
869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476**

TITLE:	HVAC 6TH FLOOR EXISTING CONDITIONS AND DEMOLITION PLAN
JOB NUMBER:	12-15
DRAWN BY:	BDM
CHECKED BY:	BDM
DATE:	March 27, 2013
SCALE:	AS NOTED
SHEET NO:	MD-1.1



NEW WORK NOTES:

1. ALL EXPOSED DUCTWORK & RELATED APPURTENANCES SHALL BE PAINTED. FINISH SHALL BE APPROVED BY THE ARCHITECT. CONFIRM PRIMING AND PAINTING REQUIREMENTS WITH ARCHITECTURAL SPECIFICATIONS.
2. CONDENSATE FROM DCUE UNITS SHALL RISE INTO THE ATTIC SPACE TO RUN HORIZONTAL.
3. HORIZONTAL CONDENSATE RUNS SHALL BE PITCHED MINIMUM 1/8"=1'-0". CLEANOUTS SHALL BE PROVIDED AT EVERY CHANGE OF DIRECTION IN CONDENSATE PIPING
4. CP-1 SHALL BE MOUNTED BELOW CEILING IN EACH SPACE TO REMAIN IN AN ACCESSIBLE LOCATION.
5. REFRIGERANT LINES AND CONDENSATE PIPING FOR UNITS MOUNTED ON NEW WALLS SHALL HAVE PIPING CONCEALED TO THE GREATEST EXTENT POSSIBLE. PIPING TO EQUIPMENT MOUNTED ON EXISTING TO REMAIN WALLS SHALL BE CONCEALED BY PIPING ENCLOSURE, FINISH SHALL BE APPROVED BY ARCHITECT.
6. PROVIDE ALL DUCT TRANSITIONS, FITTINGS & OFFSETS REQUIRED FOR EXISTING TO NEW DUCTWORK CONNECTIONS. TYPICAL FOR ALL NEW DUCTWORK CONNECTIONS AS WELL.
7. PROVIDE DUCT CONNECTIONS FROM NEW GRILLE TO NEW OR EXISTING DUCTWORK. DUCTWORK SHALL BE FULL WIDTH AND HEIGHT OF GRILLE, MOUNTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
8. PROVIDE ISOLATION VALVES AT EACH DUCTLESS COOLING INDOOR EVAPORATOR (DCUE) FOR SERVICING.



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NO: DATE:

6TH FLOOR OFFICE RENOVATION
ARLINGTON HIGH SCHOOL
869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476

TITLE:

HVAC 6TH FLOOR
DUCTWORK
VENTILATION
LAYOUT

JOB NUMBER:

12-15

DRAWN BY:

CHECKED BY:

DATE:

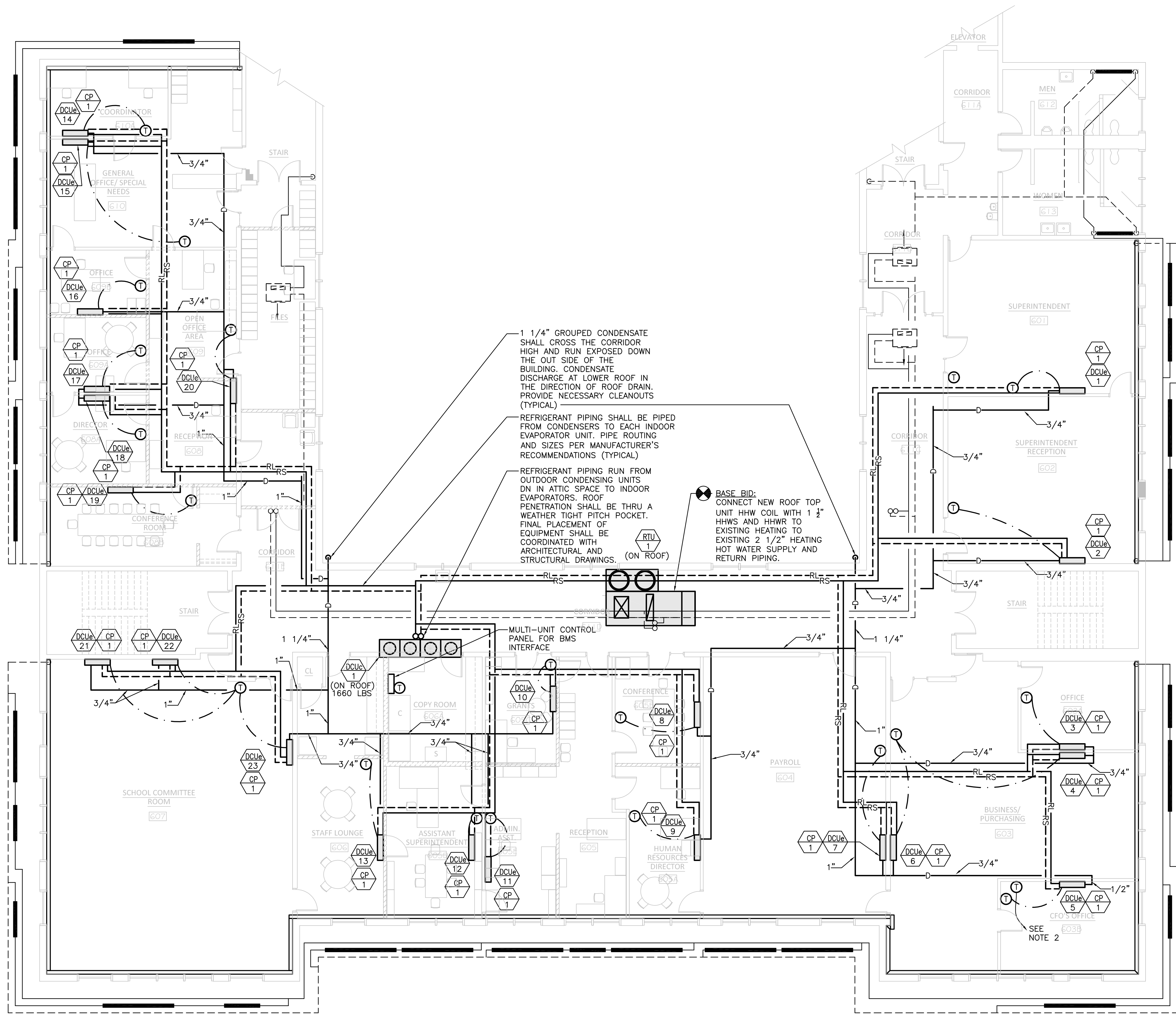
March 27, 2013

SCALE:

AS NOTED

SHEET NO:

M-1.1



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6TH FLOOR OFFICE RENOVATION
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ARLINGTON, MA 02476

TITLE:
HVAC 6TH FLOOR
VARIABLE
REFRIGERANT FLOW
AND PIPING LAYOUT

JOB NUMBER:

12-15

DRAWN BY:

CRP

CHECKED BY:

BDM

DATE:

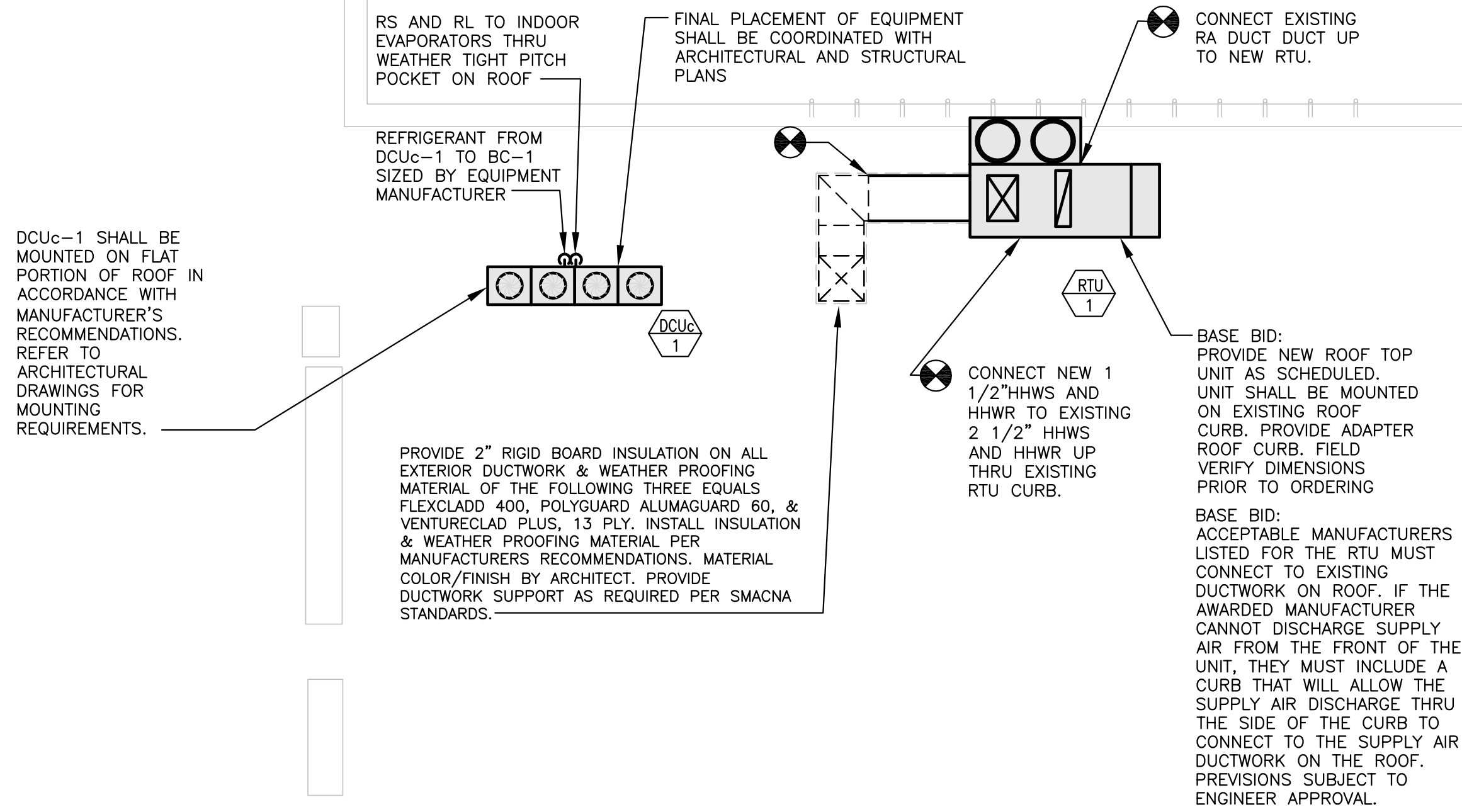
March 27, 2013

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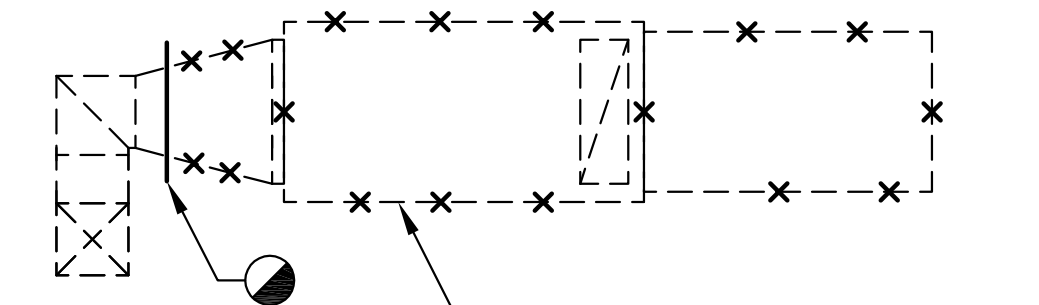
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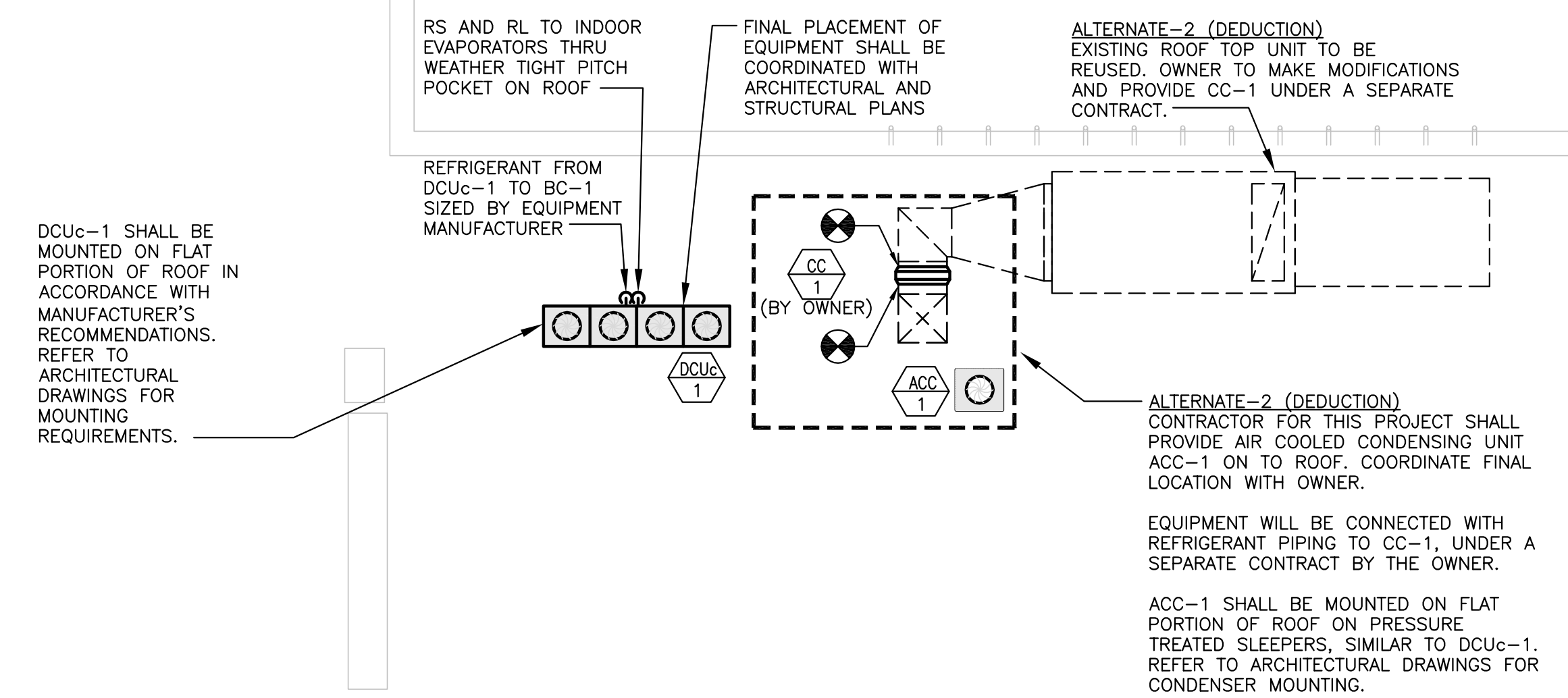
M-1.2



1 BASE BID ROOF PLAN
1/8" = 1'-0"



2 PARTIAL DEMO ROOF PLAN
1/8" = 1'-0"



1A ALTERNATE 1 ROOF PLAN
1/8" = 1'-0"

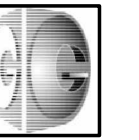


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STAMP:

REVISIONS

NO.	DATE

6TH FLOOR OFFICE RENOVATION
ARLINGTON HIGH SCHOOL
869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476

TITLE:

HVAC PARTIAL
ROOF PLANS

JOB NUMBER:
12-15

DRAWN BY:
BDM

CHECKED BY:
LV

DATE:
March 27, 2013

SCALE:
AS NOTED

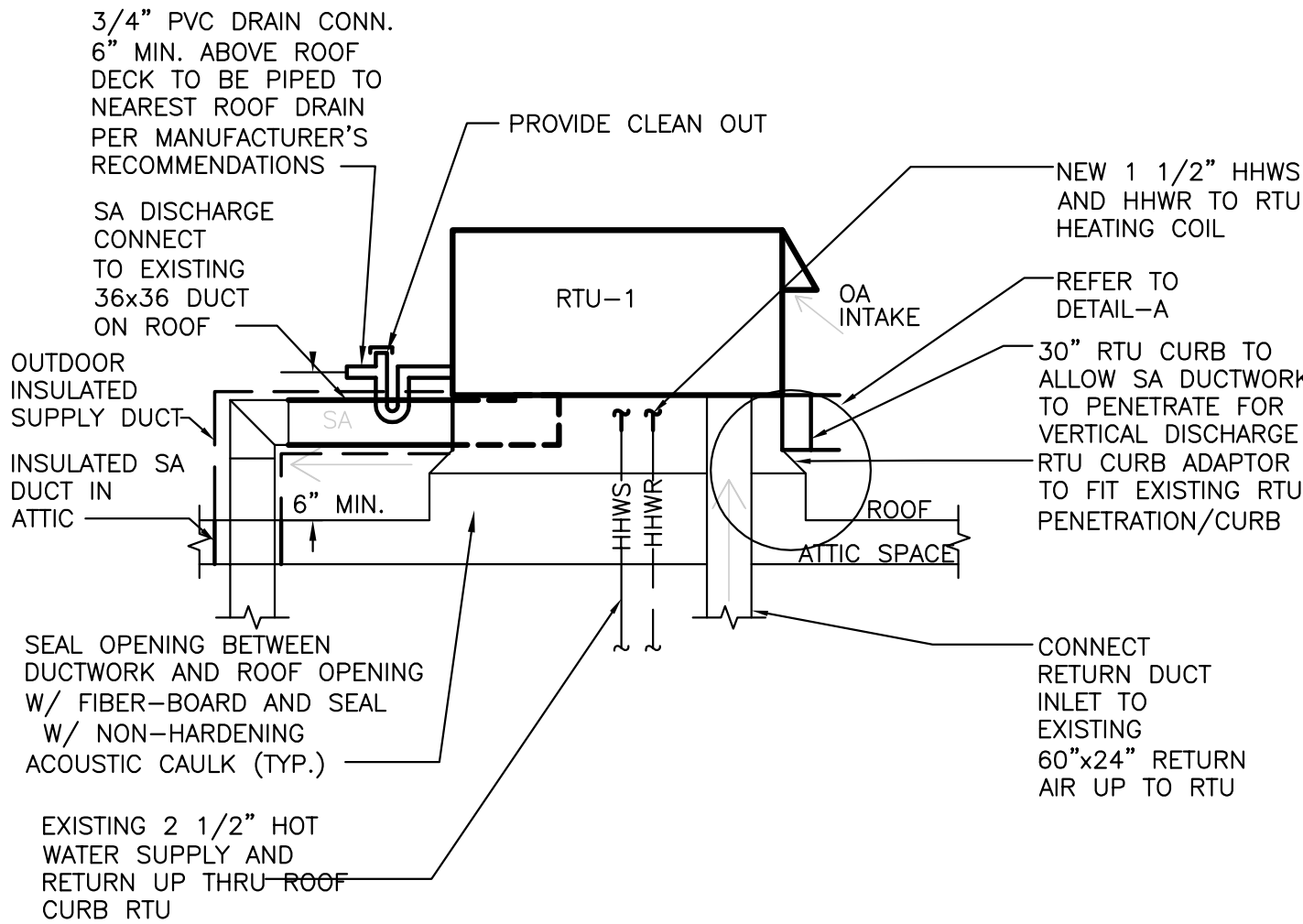
SHEET NO:

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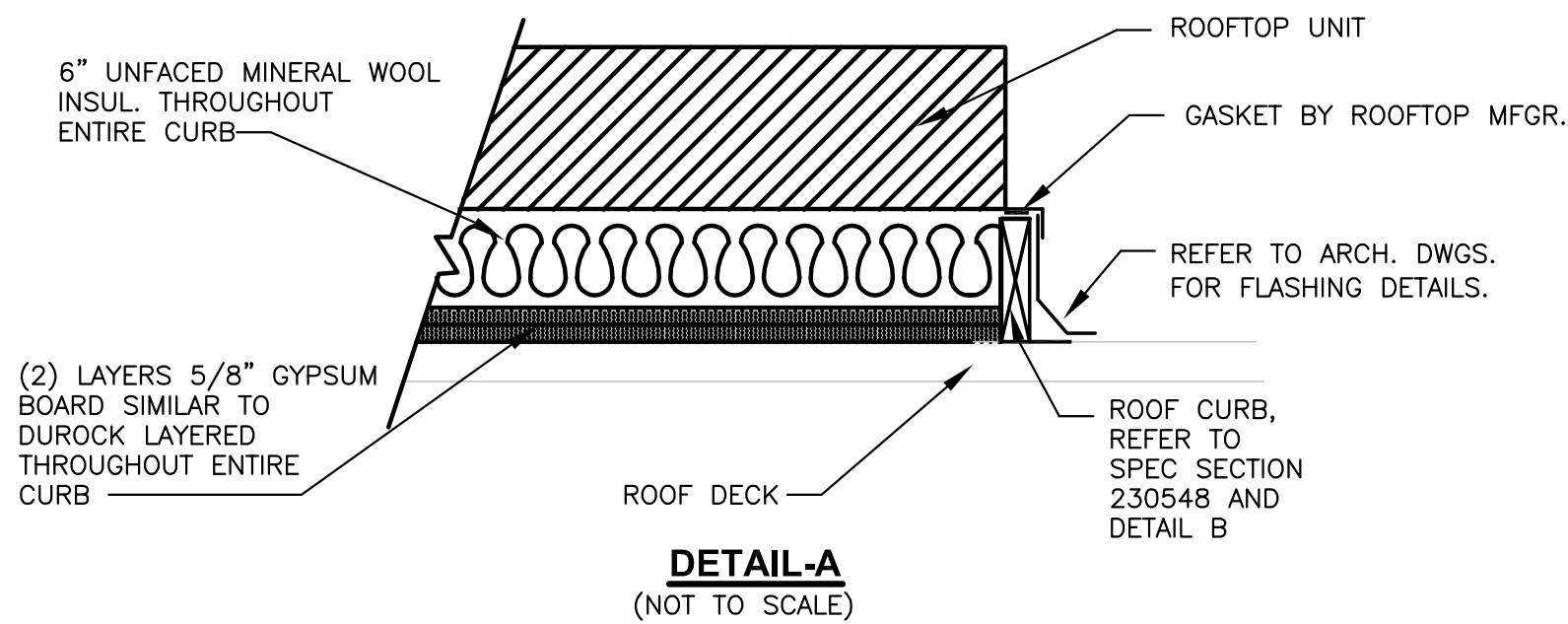
NEW ROOF TOP UNIT SHALL HAVE SUPPLY AIR DISCHARGE FROM UNIT INTO EXISTING 36"x36" SUPPLY AIR DUCTWORK ON ROOF. RETURN AIR SHALL CONNECT TO EXISTING RA AT THE BOTTOM OF THE UNIT. HVAC CONTRACTOR AND RTU MANUFACTURER SHALL PROVIDE RTU CURB OF SUFFICIENT SIZE TO ALLOW THE SUPPLY AIR TO DISCHARGE AT THE ROOF LEVEL.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING THE ASSOCIATED CURB FOR THE UNIT TO ALLOW FOR SUPPLY AIR TO CONNECT TO EXISTING SUPPLY DUCT ON ROOF UNLESS IT IS NOT REQUIRED BASED ON THE RTU AS SUBMITTED AND APPROVED

REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

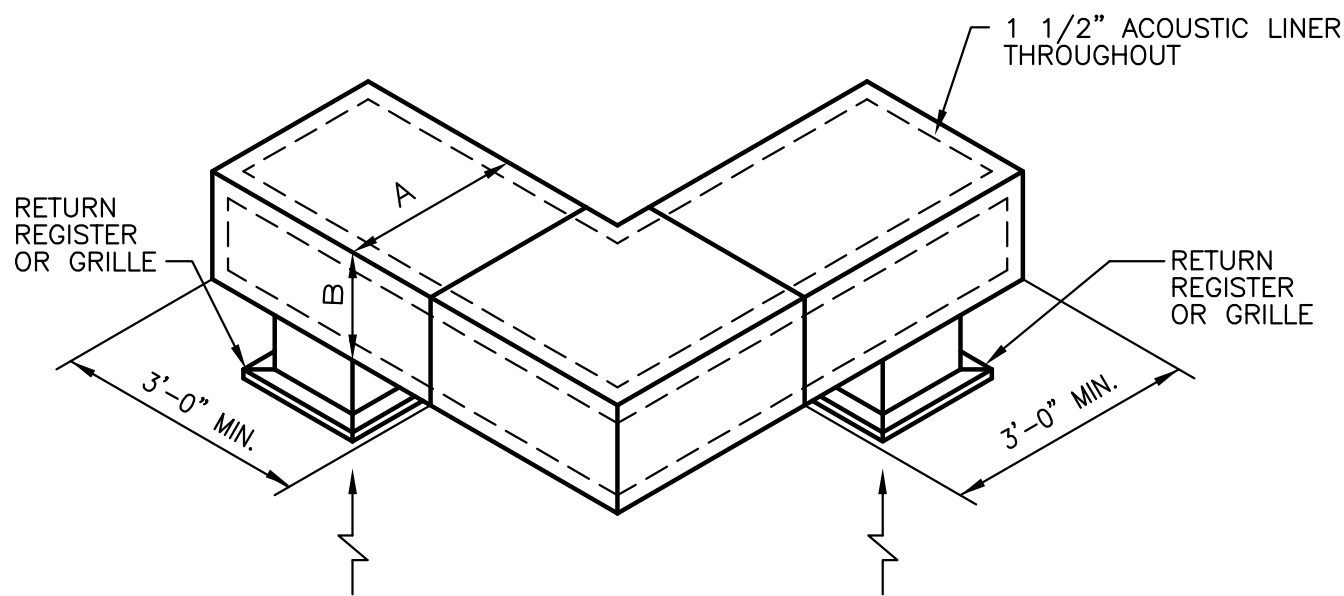


ROOFTOP UNIT DETAIL
(NOT TO SCALE)



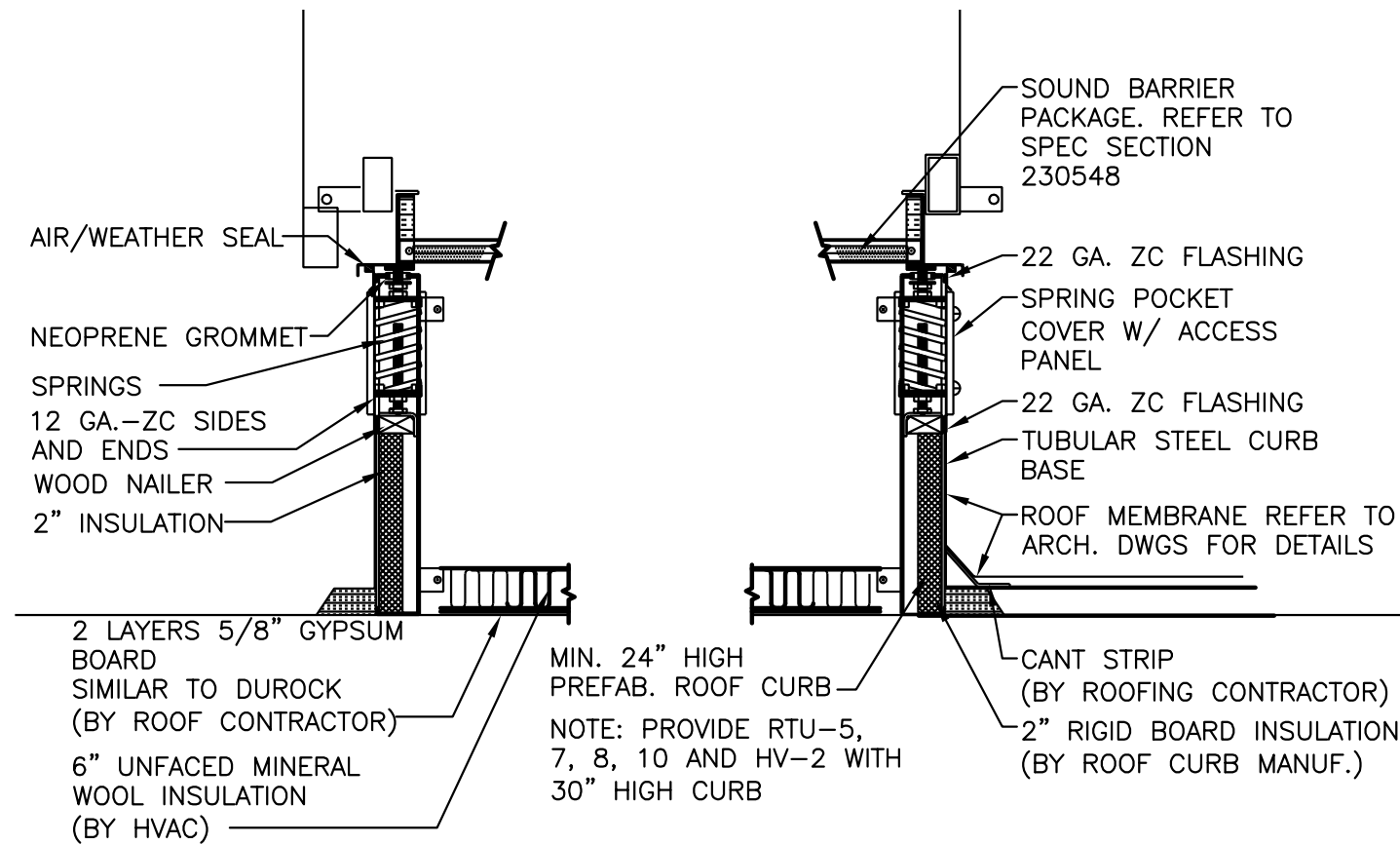
DETAIL-A
(NOT TO SCALE)

RETURN REG. SIZE	DUCT SIZE (*)		
	A	B	CFM
8x8	10	6	120
10x10	12	6	200
12x12	20	8	380
14x14	24	10	580
16x16	28	12	800

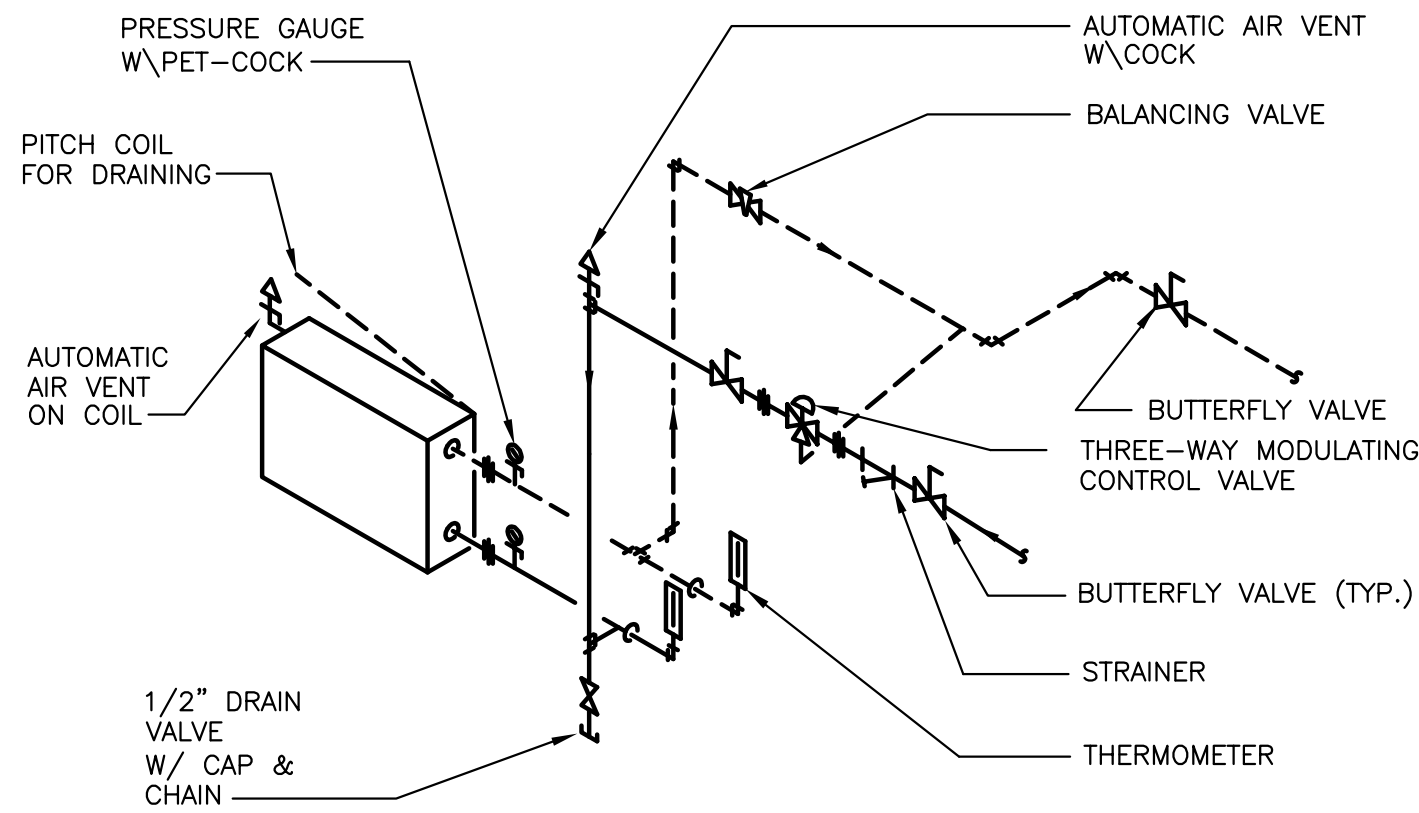


TYPICAL RETURN/TRANSFER DETAIL
(NOT TO SCALE)

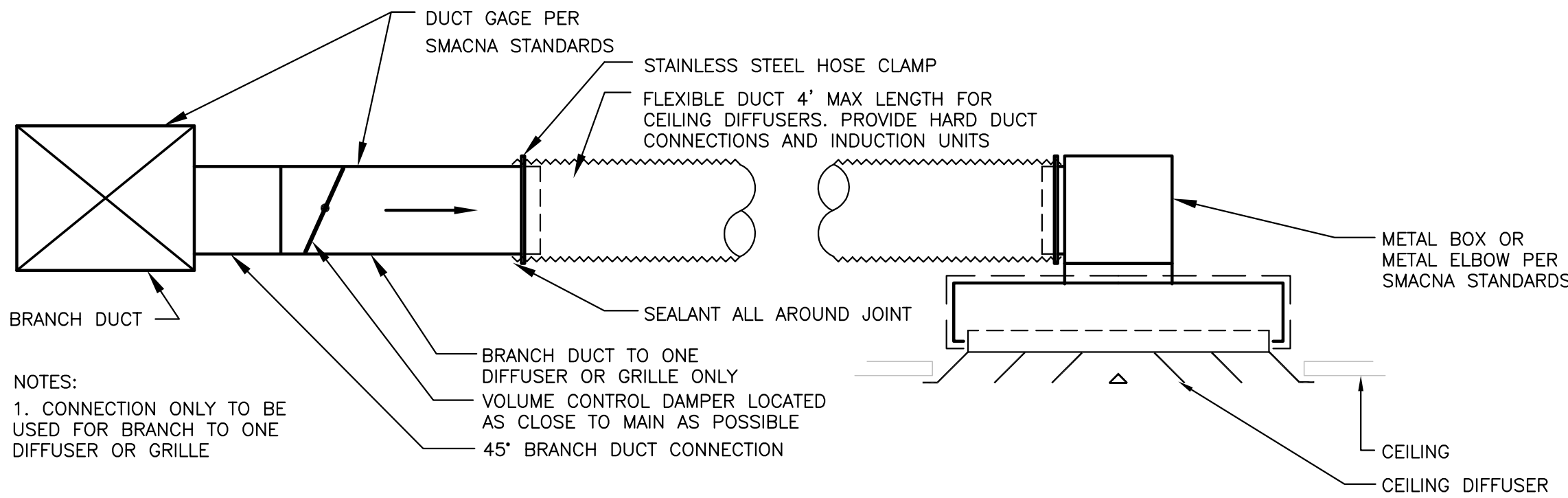
* - DUCT SIZES ARE INSIDE CLEAR DIMENSIONS.



SEISMIC SPRING ROOF CURB DETAIL
(NOT TO SCALE)

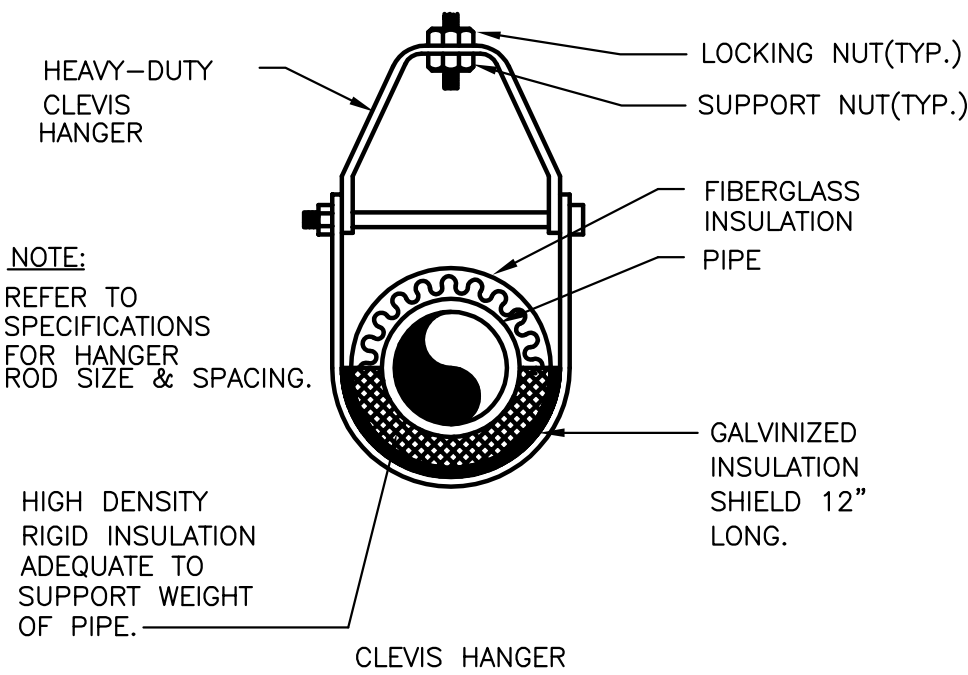


HOT WATER COIL PIPING DIAGRAM
(NOT TO SCALE)

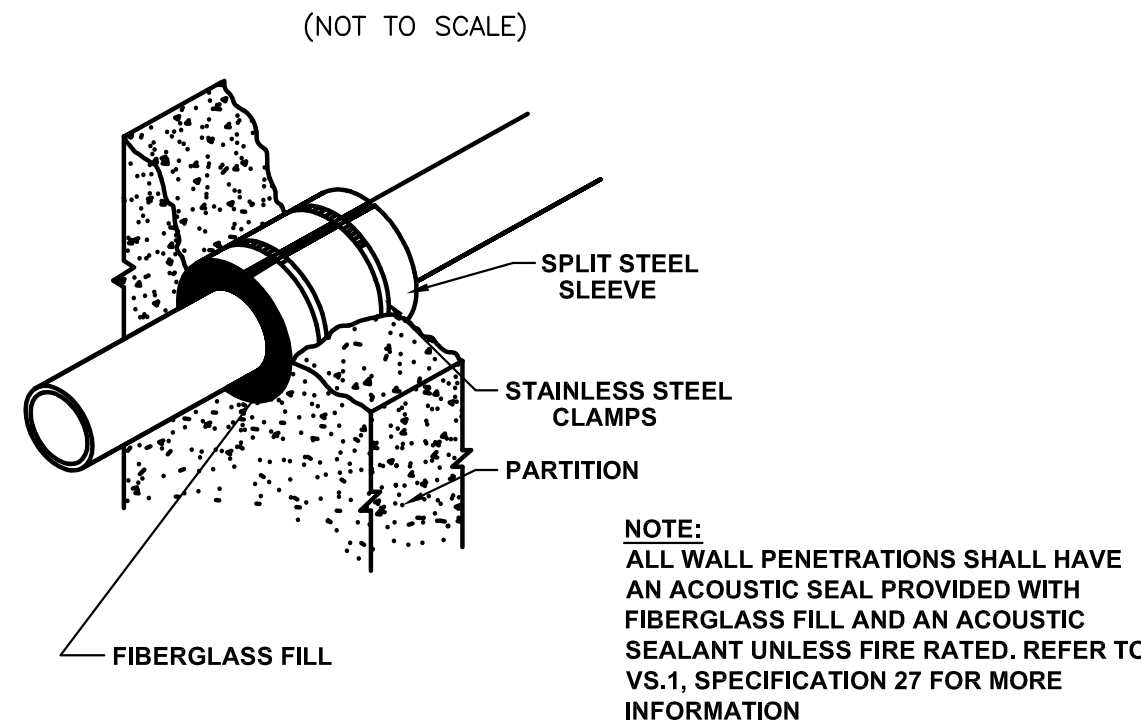


DIFFUSER/GRILLE CONNECTION TO BRANCH
(NOT TO SCALE)

NOTES:
1. CONNECTION ONLY TO BE USED FOR BRANCH TO ONE DIFFUSER OR GRILLE



TYPICAL PIPE HANGER DETAIL
(NOT TO SCALE)



TYPICAL WALL, CEILING OR FLOOR SEAL
(NOT TO SCALE)



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6TH FLOOR OFFICE RENOVATION
ARLINGTON HIGH SCHOOL
869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476

TITLE:

HVAC 6TH FLOOR
EXISTING CONDITIONS
AND DEMOLITION
PLAN

JOB NUMBER:

12-15

DRAWN BY:

BDM

CHECKED BY:

LV

DATE:

March 27, 2013

SCALE:

AS NOTED

SHEET NO:

M-2.1

ROOFTOP UNIT W/ ENERGY RECOVERY – RTU-1

THE VARIABLE VOLUME AIR HANDLING UNIT CONSISTS OF A SUPPLY AIR AND EXHAUST AIR SECTION WITH OUTDOOR AIR AND EXHAUST AIR DAMPERS, EXHAUST AIR AND OUTSIDE AIR FILTERS, ENERGY RECOVERY WHEEL, HOT WATER HEATING COIL, PACKAGED DX COOLING, AND SUPPLY AND EXHAUST FANS. THE UNIT SHALL BE DDC CONTROLLED USING ELECTRIC ACTUATION.

THE UNIT IS SCHEDULE FOR AUTOMATIC OPERATION ON A TIME OF DAY BASIS FOR OCCUPIED AND UNOCCUPIED MODES.

THE UNIT OPERATES IN OCCUPIED, UNOCCUPIED, WARM-UP AND SAFETY MODES AS FOLLOWS (ALL SUGGESTED SET POINTS AND SETTINGS ARE ADJUSTABLE).

WARM-UP
THE OUTSIDE AND EXHAUST AIR DAMPERS CLOSE. RE-CIRC DAMPER OPENS AND THE SUPPLY AND EXHAUST FANS START AND THE HOT WATER HEATING COIL VALVE SHALL MODULATE TO A FULLY OPEN POSITION. THE SYSTEM IS PREVENTED FROM ENTERING THE WARM-UP MODE MORE THAN ONCE PER DAY. MORNING WARM-UP SHALL OCCUR (1 HR. ADJ.) PRIOR TO UNIT SCHEDULED OCCUPIED START TIME (TIME PERIOD SHALL BE ADJUSTED THRU CONTROLLER'S OPTIMIZED START LOGIC UTILIZING UNIT TREND DATA).

COOL-DOWN
THE OUTSIDE AND EXHAUST AIR DAMPERS CLOSE AND THEIR END SWITCHES ACTIVATE THE ENERGY WHEEL. RE-CIRC DAMPER OPENS THEN THE SUPPLY AND EXHAUST

THE SYSTEM IS PREVENTED FROM ENTERING THE COOL-DOWN MODE MORE THAN ONCE PER DAY. MORNING COOL-DOWN SHALL OCCUR (1 HR. ADJ.) PRIOR TO UNIT SCHEDULED OCCUPIED START TIME (TIME PERIOD SHALL BE ADJUSTED THRU CONTROLLER'S OPTIMIZED START LOGIC UTILIZING UNIT TREND DATA). ECONOMIZER MODE OF OPERATION SHALL OVER-RIDE NORMAL COOL-DOWN MODE OF OPERATION..

OCCUPIED
THE FANS START OR CONTINUE TO RUN AND THE UNIT IS CONTROLLED AS FOLLOWS:
THE SUPPLY FAN SHALL RUN CONTINUOUSLY. THE OUTSIDE AIR DAMPERS SHALL OPEN AND THE ENERGY RECOVERY WHEEL WILL TRANSFER HEAT TO PREHEAT THE OUTSIDE AIR OR EXTRACT HEAT FROM THE OUTSIDE AIR TO PRECOOL TO MAINTAIN THE DISCHARGE AIR SETPOINT. THE HOT WATER HEATING COIL OR DX COOLING SHALL MODULATE AS REQUIRED TO PROVIDE ADDITIONAL HEAT OR COOLING TO THE SUPPLY AIR STREAM TO MAINTAIN THE DISCHARGE AIR SETPOINT. THE DISCHARGE AIR TEMPERATURE SETPOINT SHALL BE RESET BASED UPON OUTDOOR AIR AND SPACE TEMPERATURE REQUIREMENTS. IN HEATING MODE, THE UNIT SHALL PROVIDE A DISCHARGE AIR TEMPERATURE OF 65°F (ADJ.) AND IN COOLING MODE THE UNIT SHALL PROVIDE A DISCHARGE AIR TEMPERATURE OF 70°F, 60% RH (ADJ.)

UNOCCUPIED
THE UNIT SUPPLY AND EXHAUST FANS SHALL BE NORMALLY OFF AND OA & EA DAMPER SHALL BE CLOSED. UPON A REQUIREMENT FOR NIGHT SETBACK HEATING (60°F ADJ) OR COOLING (80° ADJ) AS INDICATED BY SPACE TEMP SENSOR THE UNIT SHALL REVERT TO OCCUPIED MODE WITH THE FOLLOWING VARIATION; UNIT SUPPLY FAN SHALL OPERATE AT 50% SPEED ADJ AND UNIT SHALL OPERATE IN RE-CIRC MODE. UNIT ERW WHEEL SHALL BE OFF AND EA & OA DAMPER SHALL BE CLOSED. DURING THE SUMMER MONTHS THE ENERGY RECOVERY WHEEL AND COOLING SYSTEM SHALL OPERATE TO MAINTAIN THE DISCHARGE AIR TEMPERATURE OF 85°F (ADJ.).

ECONOMIZER
THE UNIT SHALL BE EQUIPPED WITH A COMPARATIVE ENTHALPY ECONOMIZER MODE OF OPERATION. DURING ECONOMIZER MODE OF OPERATION, THE ENERGY RECOVERY WHEEL BYPASS DAMPERS SHALL OPEN AND THE DX COOLING SYSTEM SHALL BE DE-ENERGIZED AND THE HOT WATER COIL VALVE SHALL MODULATE CLOSED.

THE ENERGY WHEEL, HEATING HOT WATER COIL VALVE AND DIRECT EXPANSION COOLING COIL SHALL MODULATE IN SEQUENCE WITHOUT OVERLAP TO MAINTAIN THE SUPPLY AIR TEMPERATURE SET POINT REQUIRED AND MAINTAIN SPACE OCCUPIED AND UNOCCUPIED SPACE TEMPERATURE SETPOINTS.

WHEEL DEFROST CYCLE:
IF THE WHEEL DIFFERENTIAL PRESSURE RISERS 1 INCH (ADJ.) AND THE OUTSIDE AIR TEMPERATURE IS BELOW 30 DEGREES ADJ, THE WHEEL SPEED SHALL BE REDUCED UNTIL THE PRESSURE RETURNS TO NORMAL.

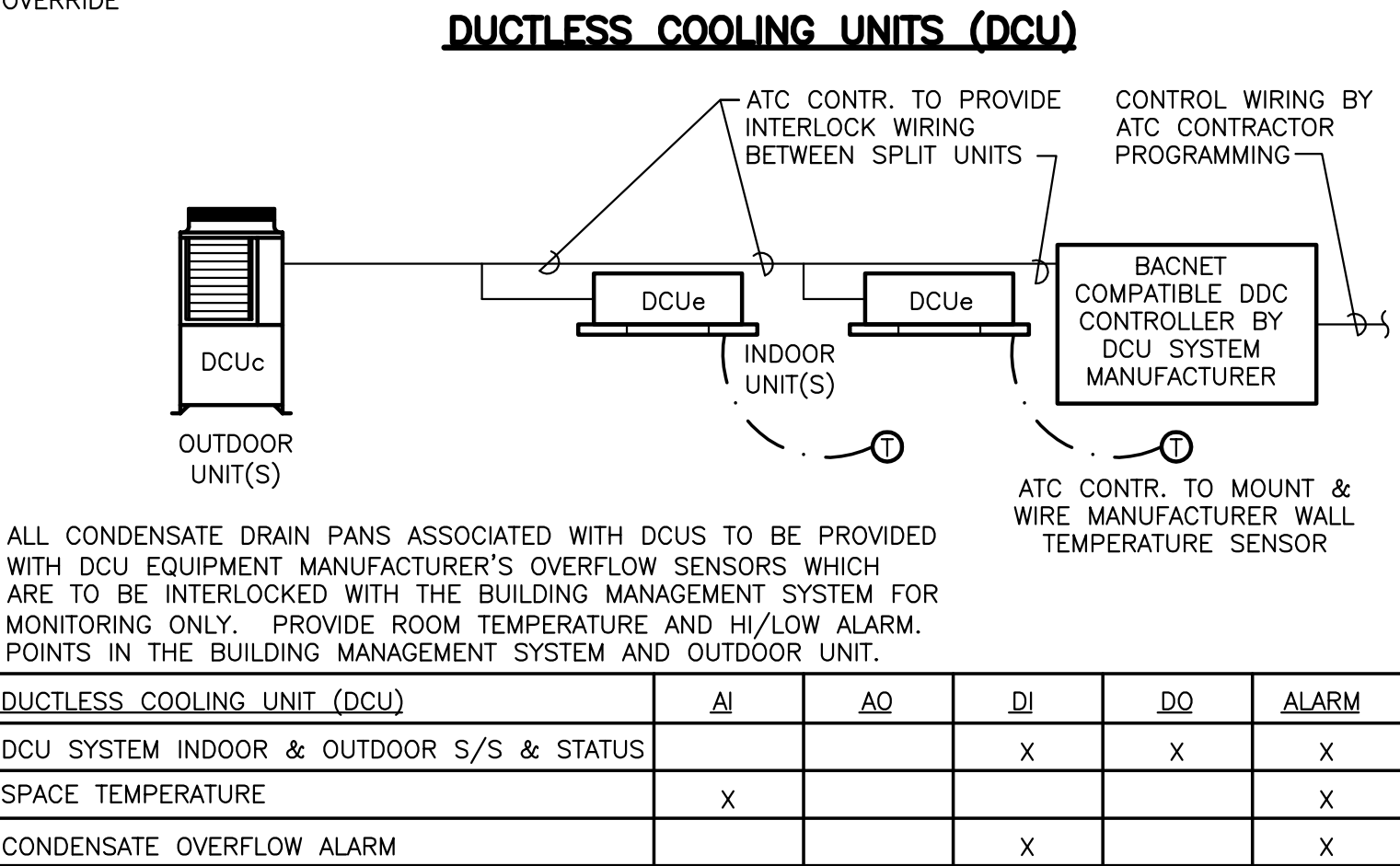
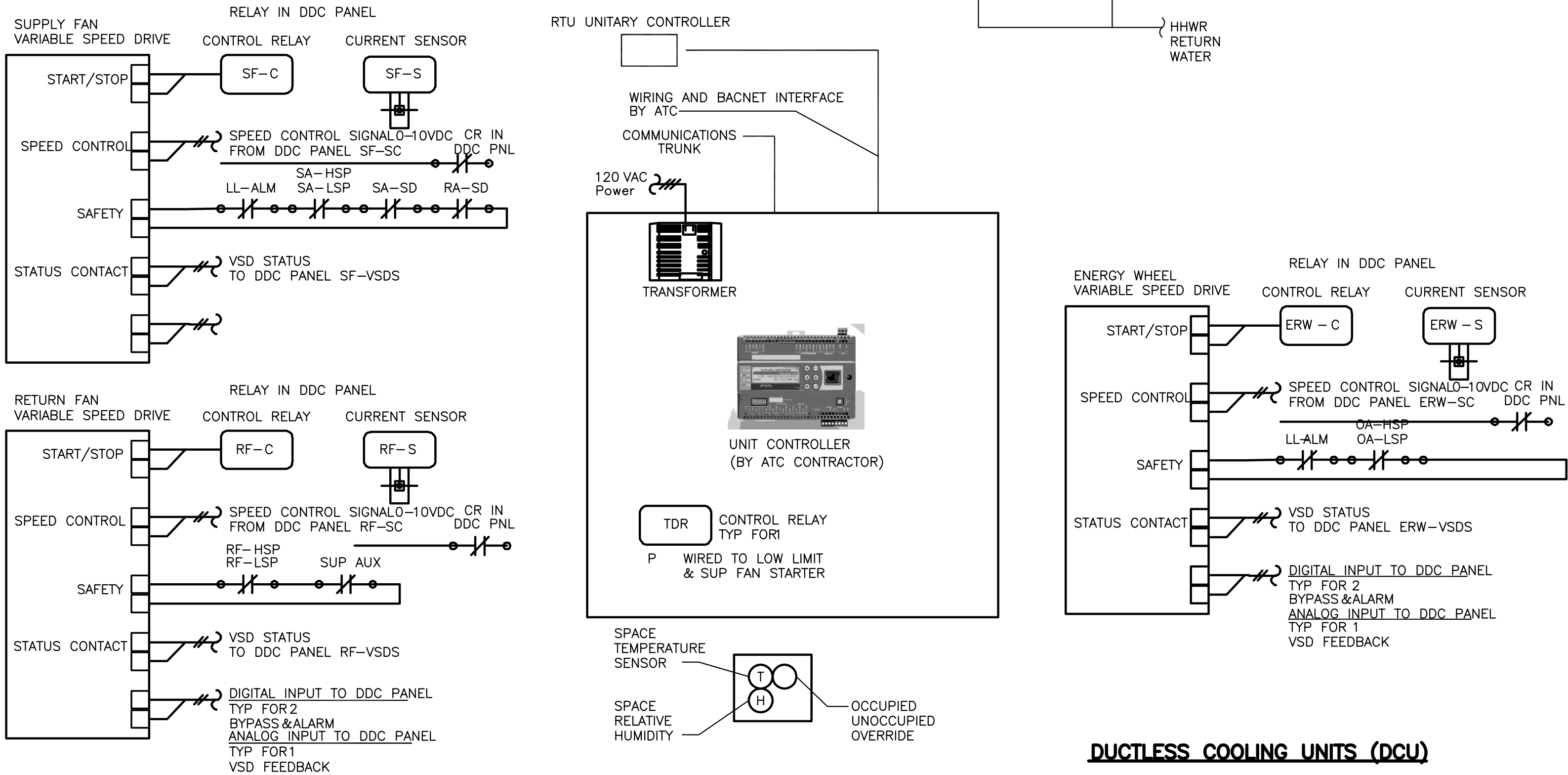
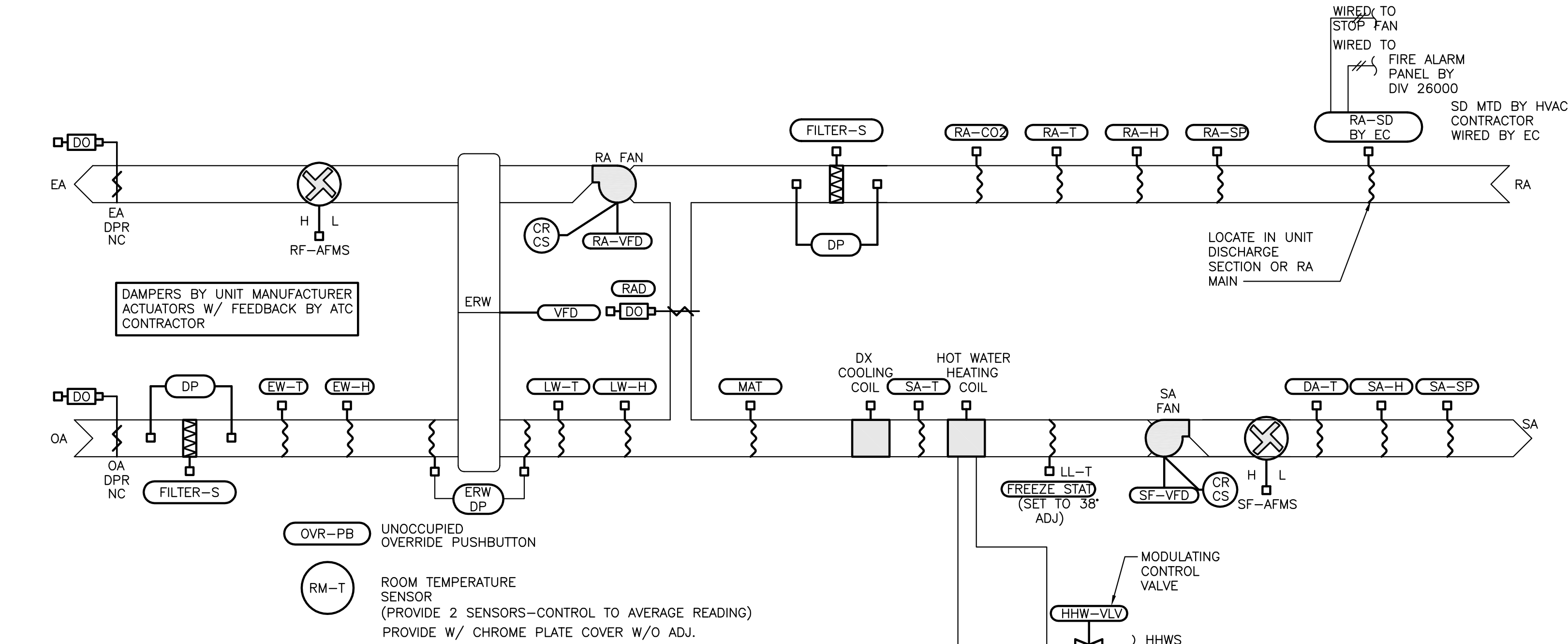
SAFETY
DISCHARGE HIGH STATIC CUT OUT, SMOKE DETECTOR IN RETURN AIR STREAM DE-ENERGIZES THE SUPPLY AND RETURN FAN UPON ACTIVATION. THE HOT WATER HEATING COIL VALVE & DX SYSTEM SHALL CLOSE. ALL OTHER DAMPERS AND VALVES POSITION TO THEIR NORMAL UNIT OFF POSITION AFTER THE FANS ARE DE-ENERGIZED.

CURRENT SWITCHES ARE INSTALLED IN THE SUPPLY AND RETURN FAN STARTERS. THE DDC SYSTEM USES THESE SWITCHES TO CONFIRM THE FANS ARE IN THE DESIRED STATE (I.E. ON OR OFF) AND GENERATES AN ALARM IF STATUS DEVIATES FROM DDC START/STOP CONTROL. IF EITHER SUPPLY OR RETURN FAN FAILS, THE OTHER FAN SHALL SHUT DOWN AND AN ALARM SHALL BE GENERATED.

FREEZESTAT: UPON A LLT READING (38 DEG F ADJ.) THEN UNIT'S SUPPLY AND RETURN FANS SHALL SHUT DOWN, OUTDOOR AIR AND EXHAUST AIR DAMPERS SHALL CLOSE, RE-CIRC AIR DAMPER SHALL OPEN AND HHW COIL VALVE SHALL OPEN TO 100% OPEN POSITION AND AN ALARM SHALL BE GENERATED. ONCE LLT SENSOR READING HAS BEEN RAISED ABOVE SETPOINT FOR (20 MIN, ADJ.) THE FREEZESTAT CONTROLS SHALL BE AUTOMATICALLY RESET AND THE UNIT SHALL RETURN TO ITS NORMALLY SCHEDULED MODE OF OPERATION.

HVAC RTU-1	AI	AQ	DJ	DO	ALARM	REMARKS
SUPPLY FAN S/S & STATUS		X	X	X	X	
SUPPLY FAN VFD	X		X	X	X	
RETURN & EXHAUST AIR TEMP.	X					
RETURN AIR %RH	X					
RA/EA/OA DAMPER POS. (EACH)			X	X	X	
FILTER STATUS OA/EA			X		X	
SUPPLY S.P.	X				X	
RETURN FAN S/S & STATUS		X	X	X	X	
RETURN FAN VFD	X		X	X	X	
RETURN S.P.	X					
SUPPLY AIR TEMP.	X					
SUPPLY AIR HUMIDITY %RH	X					
AIRFLOW CFM (SA & EA)	X					
AIRFLOW CFM (OA) (FROM OUTDOOR CALC)	X					SEE NOTE 1
ENERGY RECOVERY WHEEL			X	X	X	
ENERGY RECOVERY WHEEL BYPASS DAMPER/VFD (AS EQUIPPED)			X	X	X	
ENERGY WHEEL ENTERING TEMP.	X					
ENERGY WHEEL LEAVING TEMP.	X				X	
ENERGY WHEEL ENTERING %RH	X					
ENERGY WHEEL LEAVING %RH	X				X	
WHEEL ΔP	X				X	
MIXED AIR TEMP.	X				X	
COOLING CAPACITY CONTROL (MODULATING CONTROL VALVE)	X	X			X	
HOT WATER HEATING CONTROL (MODULATING CONTROL VALVE)		X				NOTE 2
RA – SMOKE DETECTOR			X		X	LOCATE AS INDICATED ON DWG
RA DUCT CO2 LEVEL	X				X	MONITORING ONLY
FREEZESTAT	X			X	X	WITH AUTOMATIC RESET

- NOTES:
1. PROVIDE % OUTSIDE AIR VIA CALCULATION: $\% OA = \left(\frac{RAT - MAT}{RAT - OAT} \right) \times 100\%$
 2. PROVIDE MODULATING HHW COIL CONTROL VALVE W/ POSITION FEEDBACK AND DISCHARGE AIR SENSOR (ADJ. SETPOINT)



ALL CONDENSATE DRAIN PANS ASSOCIATED WITH DCUS TO BE PROVIDED WITH DCU EQUIPMENT MANUFACTURER'S OVERFLOW SENSORS WHICH ARE TO BE INTERLOCKED WITH THE BUILDING MANAGEMENT SYSTEM FOR MONITORING ONLY. PROVIDE ROOM TEMPERATURE AND HI/LOW ALARM. POINTS IN THE BUILDING MANAGEMENT SYSTEM AND OUTDOOR UNIT.

DUCTLESS COOLING UNIT (DCU)	AI	AQ	DJ	DO	ALARM
DCU SYSTEM INDOOR & OUTDOOR S/S & STATUS			X	X	X
SPACE TEMPERATURE	X				X
CONDENSATE OVERFLOW ALARM			X		X

PROVIDE EVAPORATOR UNIT START/STOP/STATUS/TEMP CONTROL POINTS VIA DCU SYSTEM CONTROLLER'S BAS INTERFACE.

SAFETY
IF THE FLOAT SENSOR SENDS A SIGNAL TO THE CONDENSATE PUMP AND THE CP DOES NOT RESPOND, THE DCUe SHALL DE-ENERGIZE AND GO INTO ALARM TO PREVENT CONDENSATION OVERFLOW.



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978-235-1272 • FAX 978-235-1273 • Email: info@g-g-d.com

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REVISIONS

NO:

DATE:

6TH FLOOR OFFICE RENOVATION
ARLINGTON HIGH SCHOOL
869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476

TITLE:

HVAC CONTROLS
DIAGRAM

JOB NUMBER:

12-15

DRAWN BY:

BDM

CHECKED BY:

LV

DATE:

March 27, 2013

SCALE:

AS NOTED

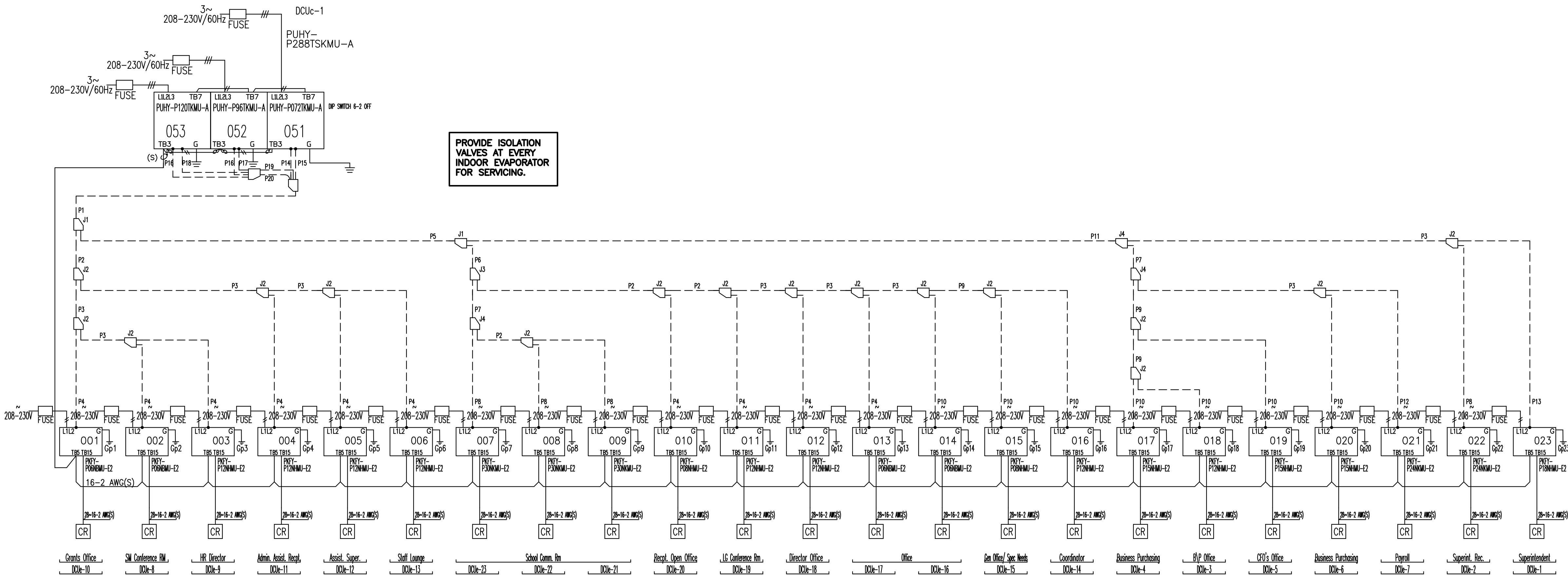
SHEET NO:

M-3.1

Arlington District Office	
DIAGRAM SYMBOL LEGEND	CONT.No PAGE
—//—	POWER WIRE
—•—•—	CONTROL WIRE
— — —	REF. PIPE

PIPING LIST	
SYMBOL	BRANCH PIPE MODEL NAME
J1	CMY-Y302-G2
J2	CMY-Y102SS-G2
J3	CMY-Y202SS-G2
J4	CMY-Y102IS-G2
SYMBOL LIQUID PIPE GAS PIPE SIZE	
P1	3/4 1-3/8
P2	3/8 3/4
P3	3/8 5/8
P4	1/4 1/2
P5	3/4 1-3/8
P6	5/8 1-1/8
P7	3/8 7/8
P8	3/8 5/8
P9	1/2 1/2
P10	3/8 1/2
P11	1/2 1-1/8
P12	1/2 5/8
P13	3/8 1/2
P14	1/2 1/2
P15	3/8 1-1/8
P16	3/8 7/8
P17	3/8 7/8
P18	3/4 7/8
P19	3/4 1-3/8
P20	3/4 1-3/8

RAC-HD150
201
LANT
TBS
AC100-240V (50/60Hz)



REMARKS
Customer Name: Arlington District Office
Comments: Contact Homans Associates at (508) 400-1423 or (617) 548-8012 for pricing and equipment information

CITY MULTI
SYSTEM SCHEMATIC DWG.

Additional refrigerant charge is needed depending on the size and length of extended piping.
Please refer the amount of pre-charge and the formula of calculation which is mentioned on the data book.
1.25mm(16 AWG) : 1.25mm(16 AWG) or more. 0.75mm(20 AWG) : between 0.5mm(24 AWG) and 0.75mm(20 AWG).

PROVIDE ISOLATION
VALVES AT EVERY
INDOOR EVAPORATOR
FOR SERVICING.



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6TH FLOOR OFFICE RENOVATION
ARLINGTON HIGH SCHOOL
869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476

TITLE:

HVAC VRF SYSTEM
SCHEMATIC DCU
LAYOUT

JOB NUMBER:

12-15

DRAWN BY:

BDM

CHECKED BY:

LV

DATE:

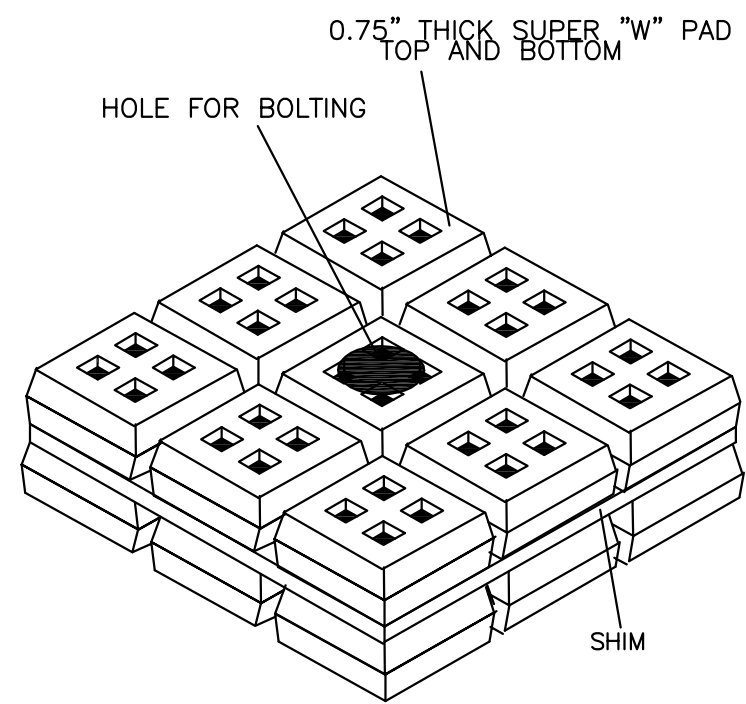
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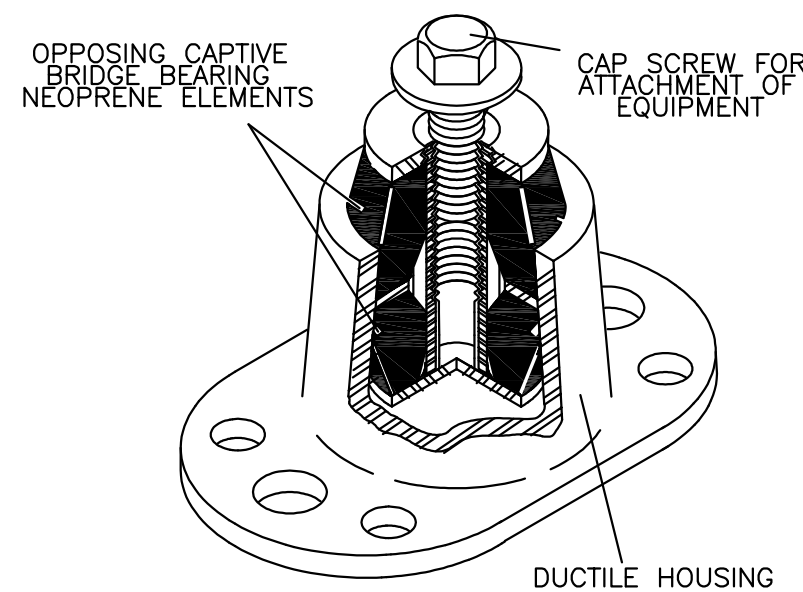
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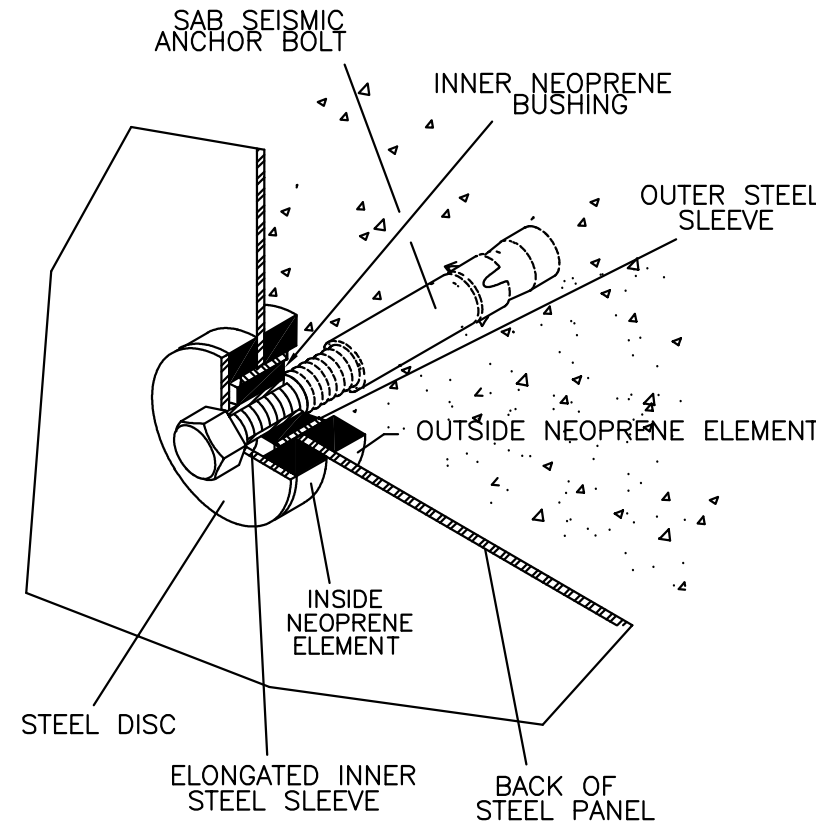
M-3.2



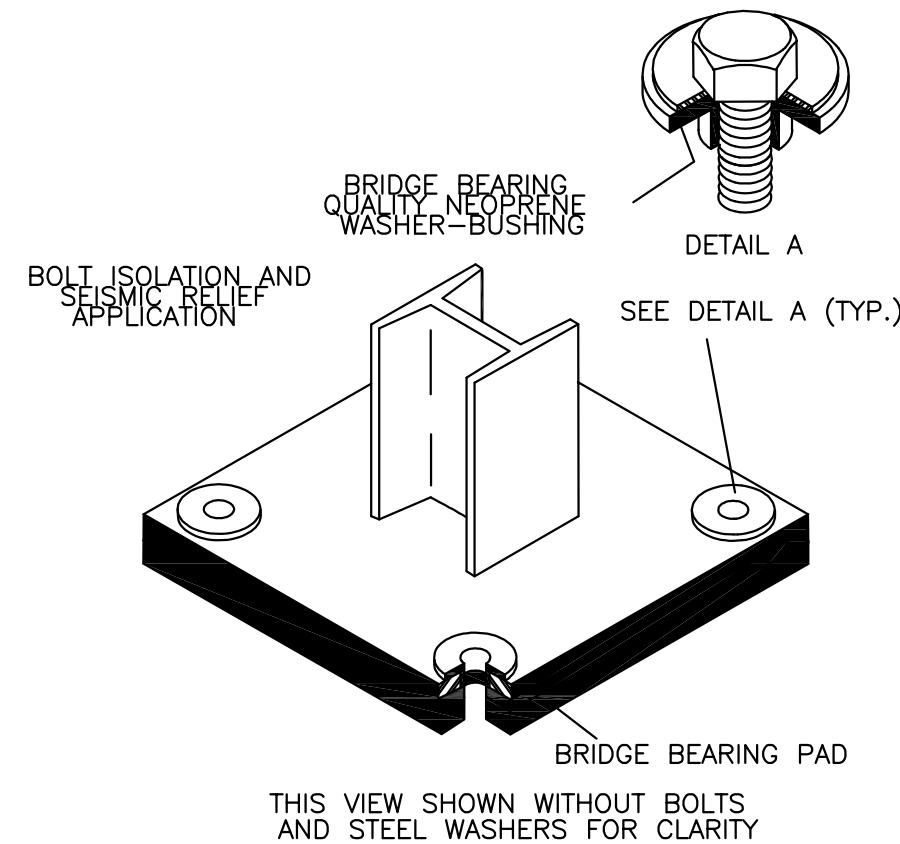
LAYERED SUPER "W" PADS
WITH STEEL SHIM
SPECIFICATION 1



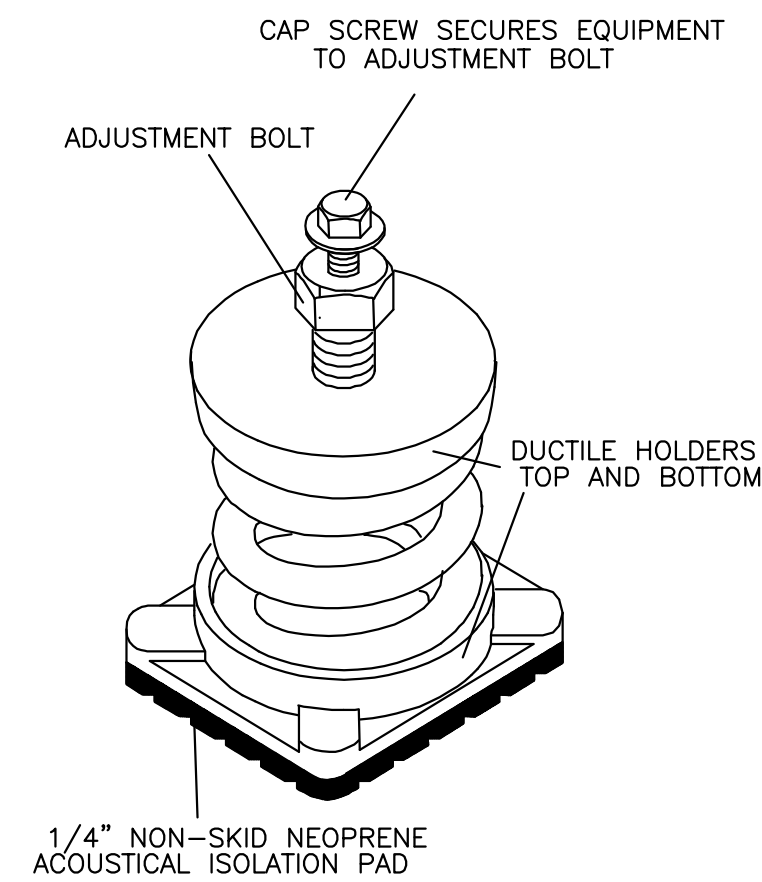
RESTRAINED BR MOUNT
SPECIFICATION 2



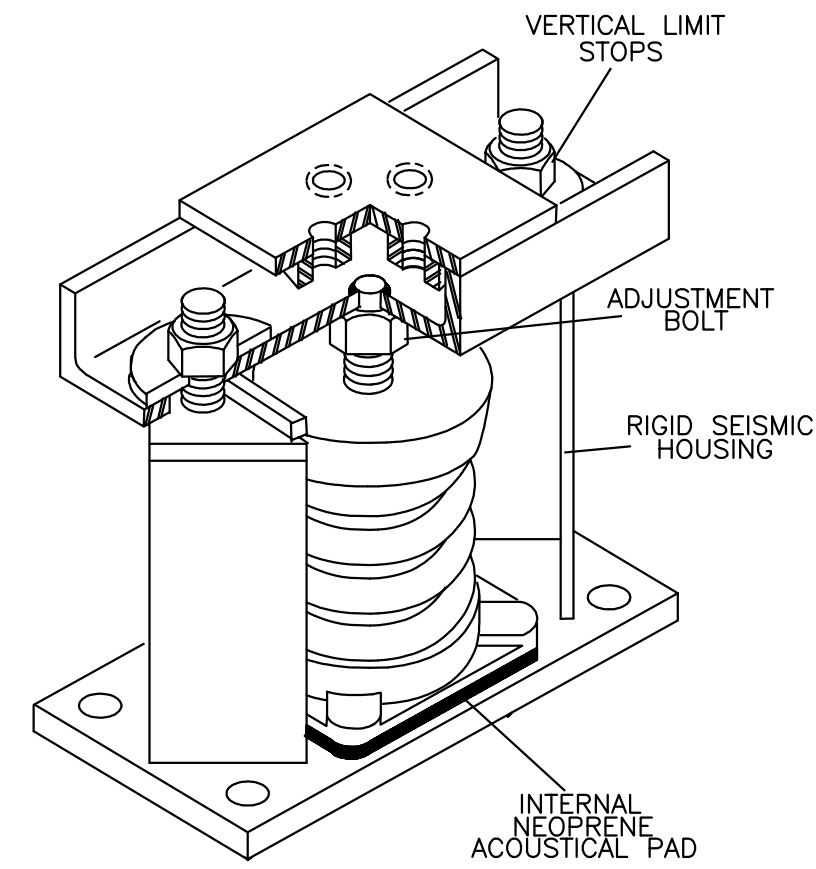
PB BUSHING
SPECIFICATION 3



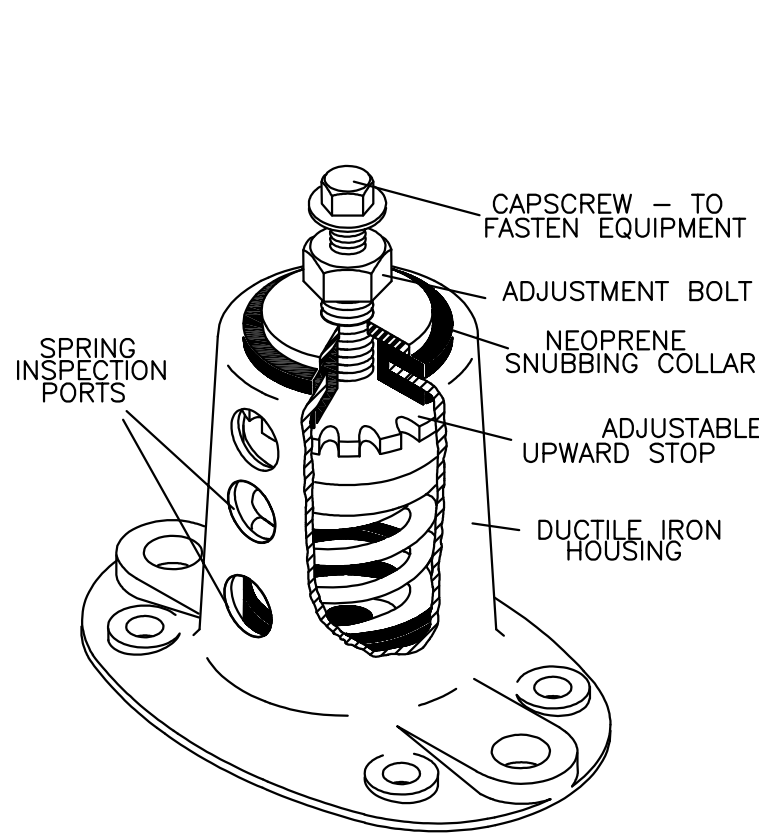
HG NEOPRENE BUSHING
SPECIFICATION 4



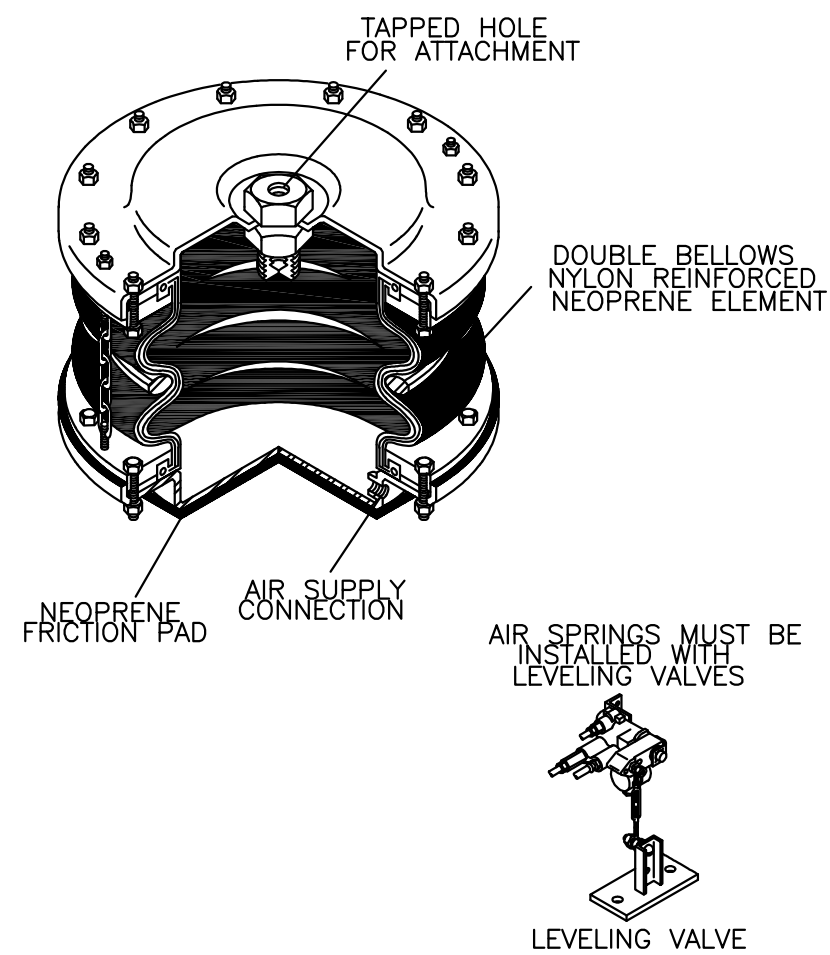
SLF SPRING MOUNT
SPECIFICATION 5



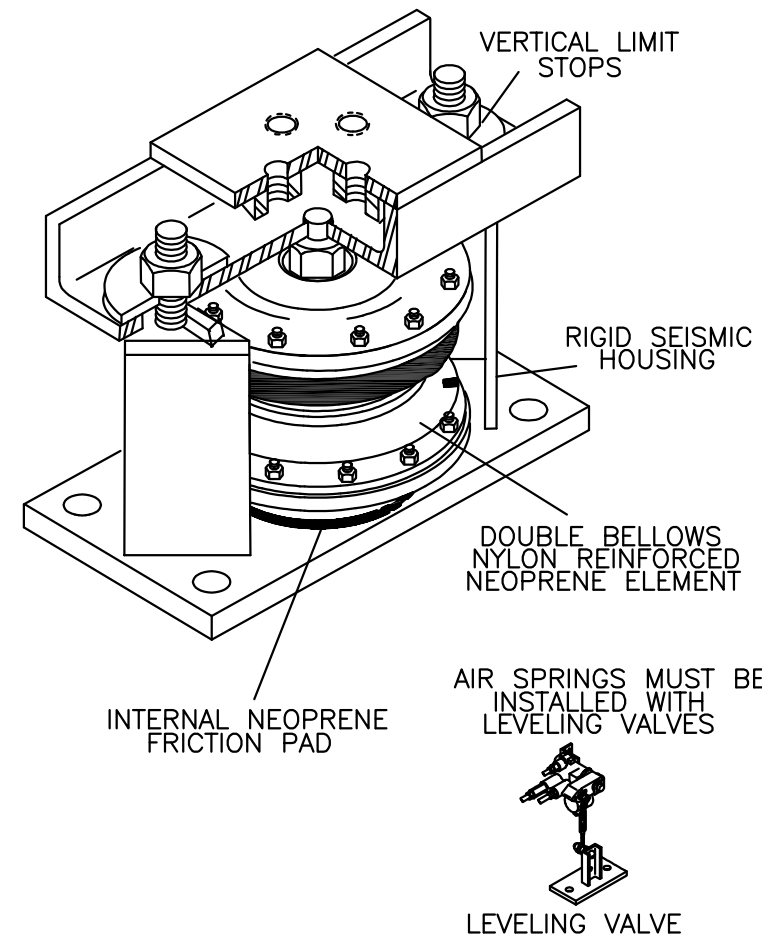
SLR SPRING MOUNT
SPECIFICATION 6



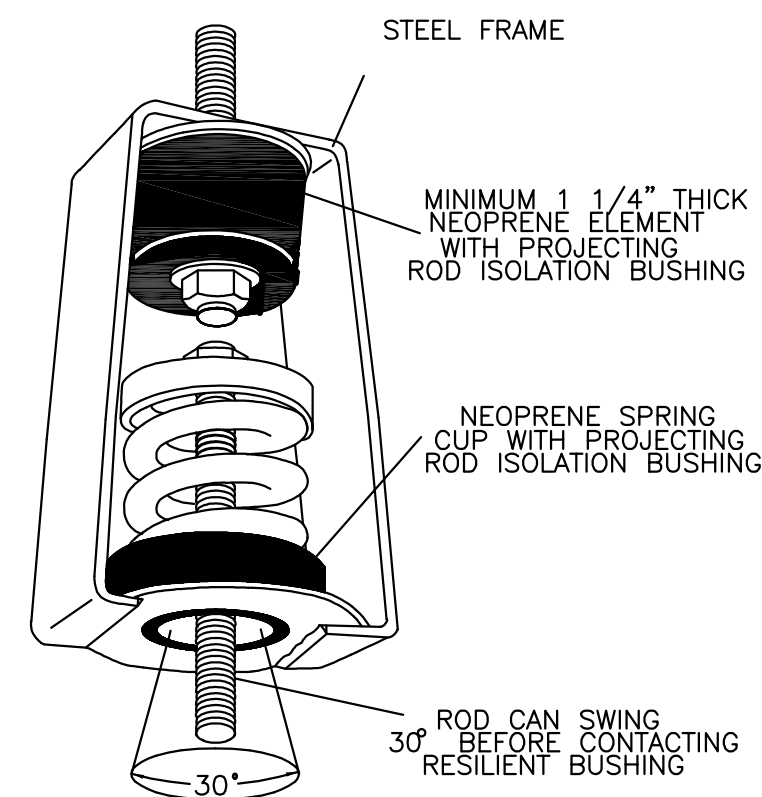
SSLFH HOUSED SPRING MOUNT
SPECIFICATION 7



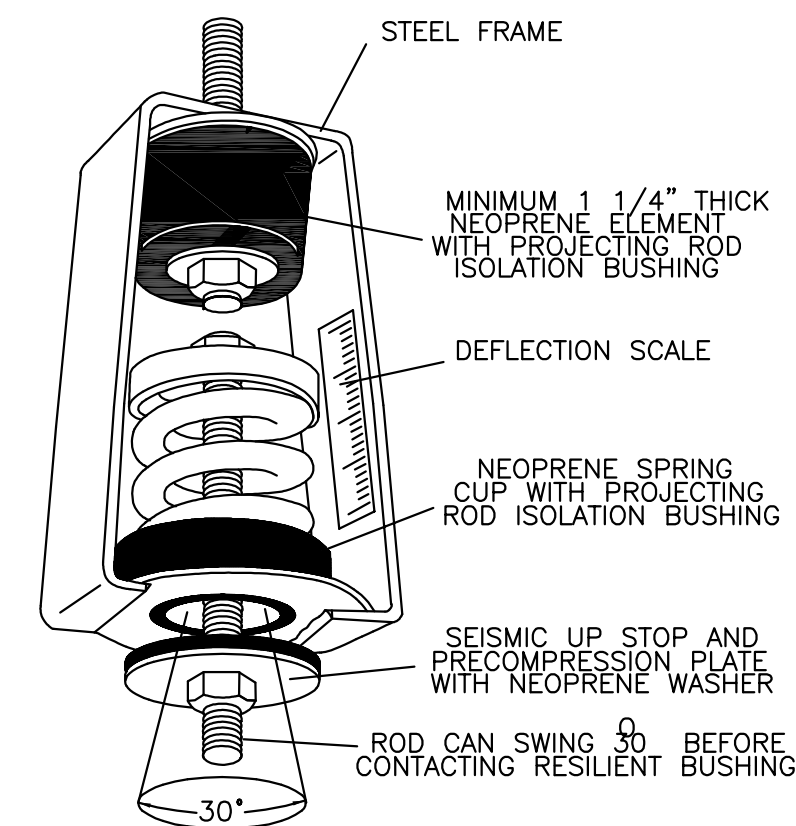
MT AIR SPRING MOUNT
SPECIFICATION 8



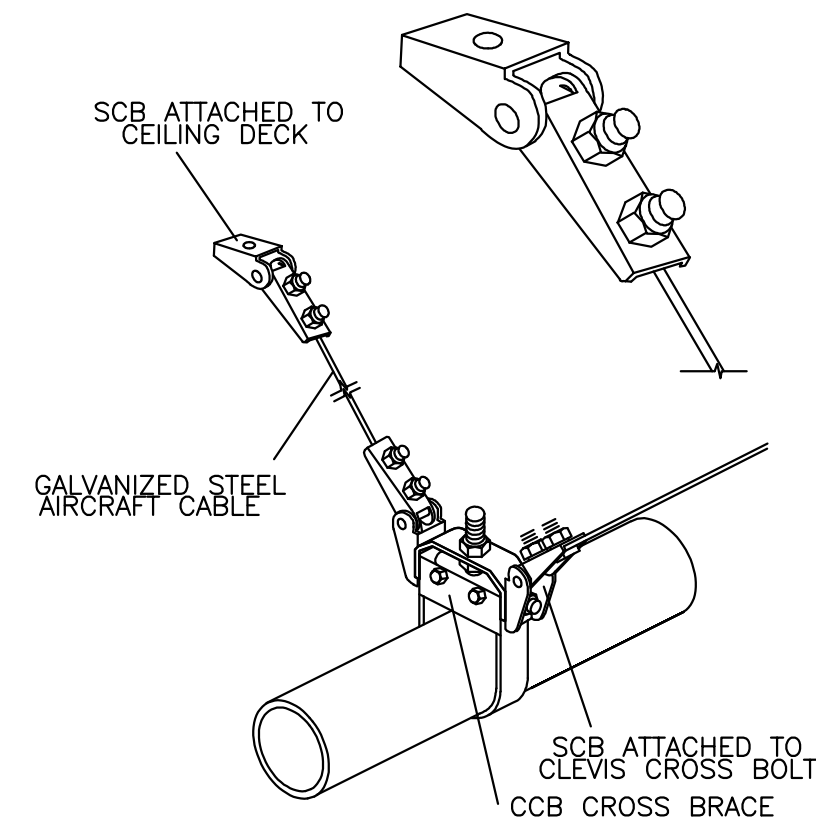
SLR AIR SPRING MOUNT
SPECIFICATION 9



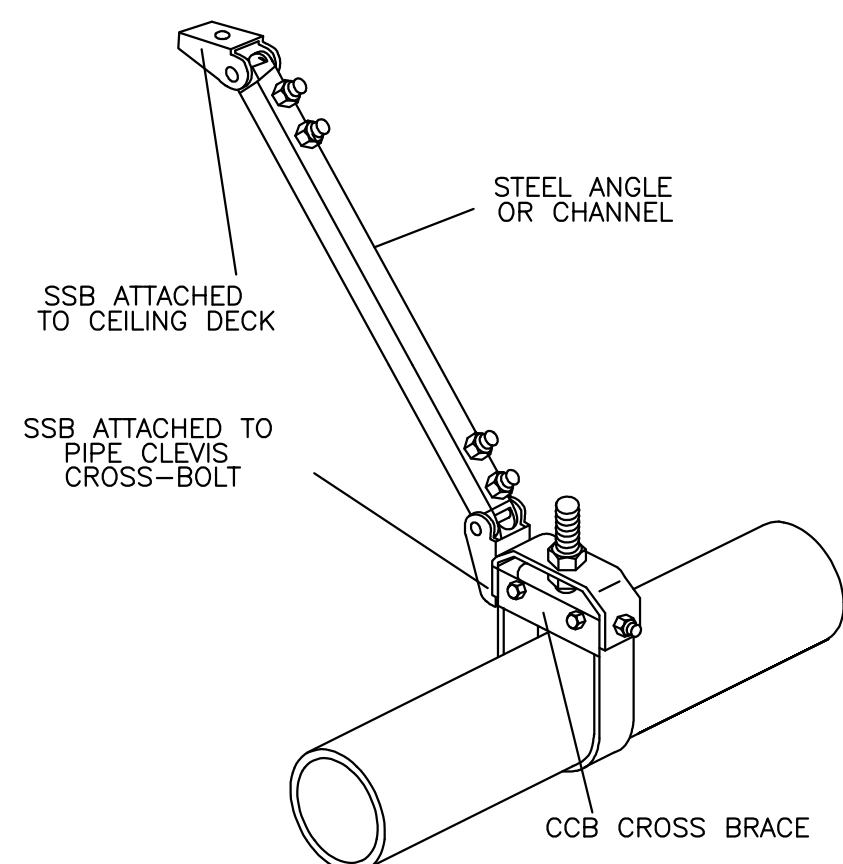
3ON SPRING AND NEOPRENE HANGER
SPECIFICATION 10



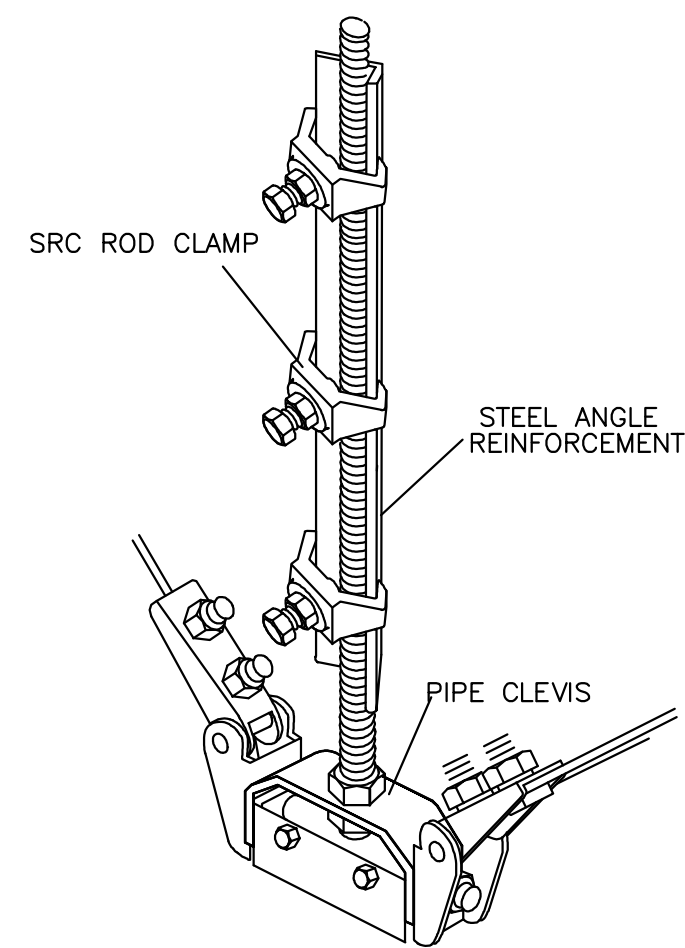
PC3ON PRECOMPRESSED
SPRING AND NEOPRENE HANGER
SPECIFICATION 11



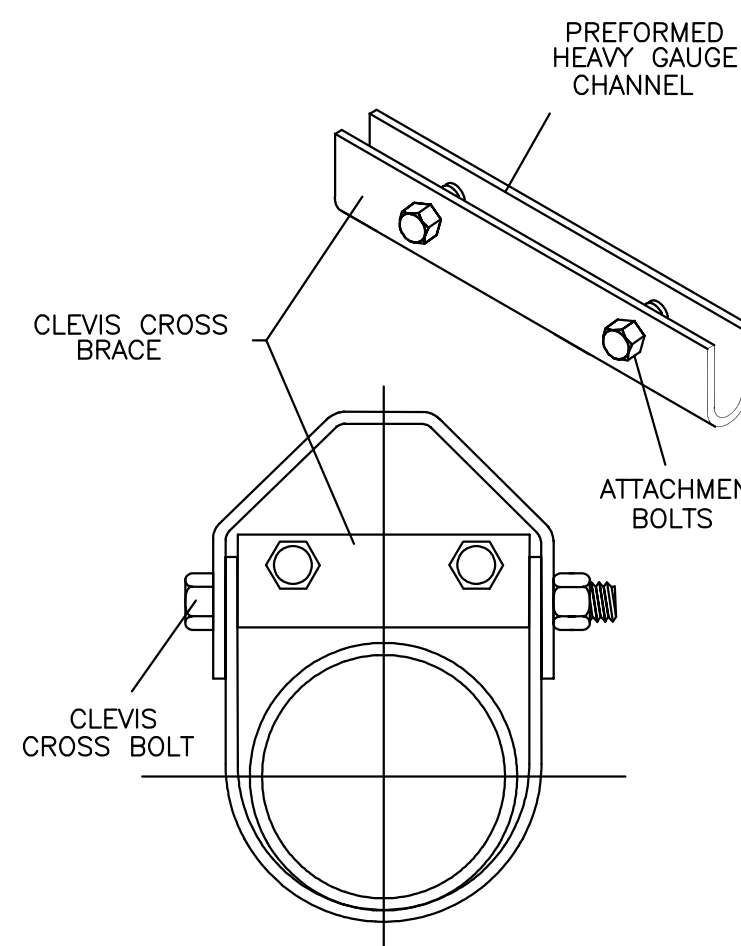
SCB, SCBH, AND SCBV CABLE RESTRAINTS
OSPD PRE-APPROVAL NO. 0202
SPECIFICATION 12



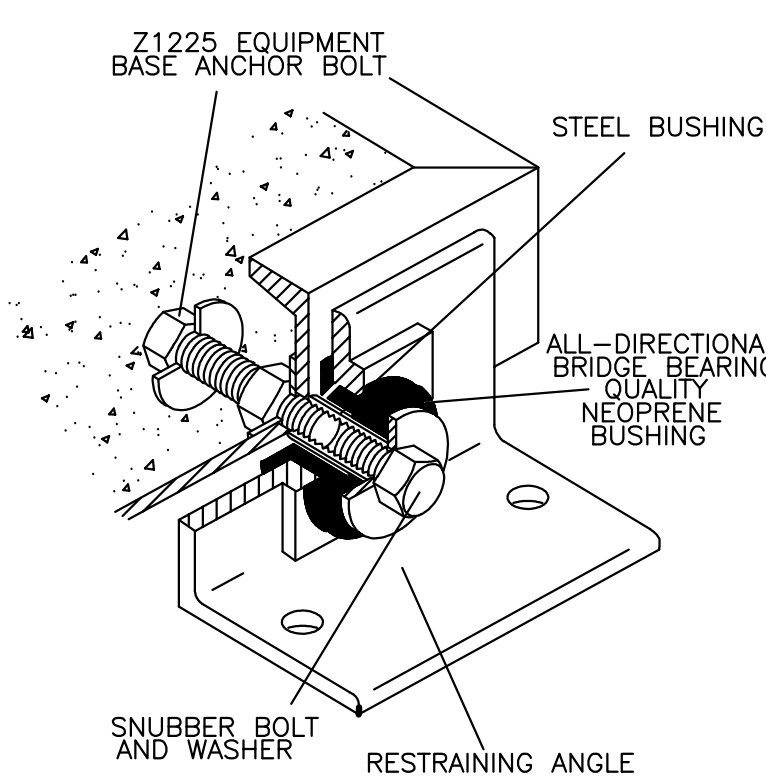
SEISMIC SOLID BRACE
SPECIFICATION 13



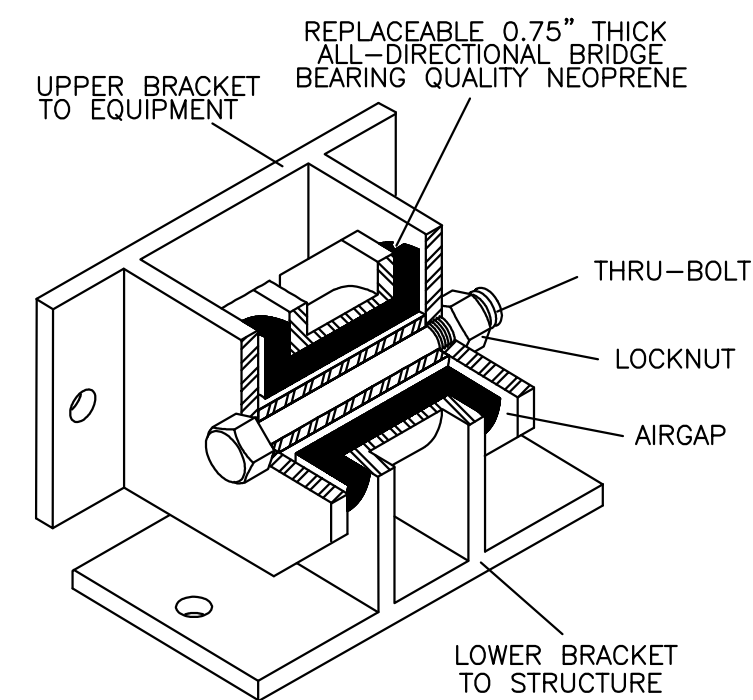
SRC SEISMIC ROD CLAMPS
SPECIFICATION 14



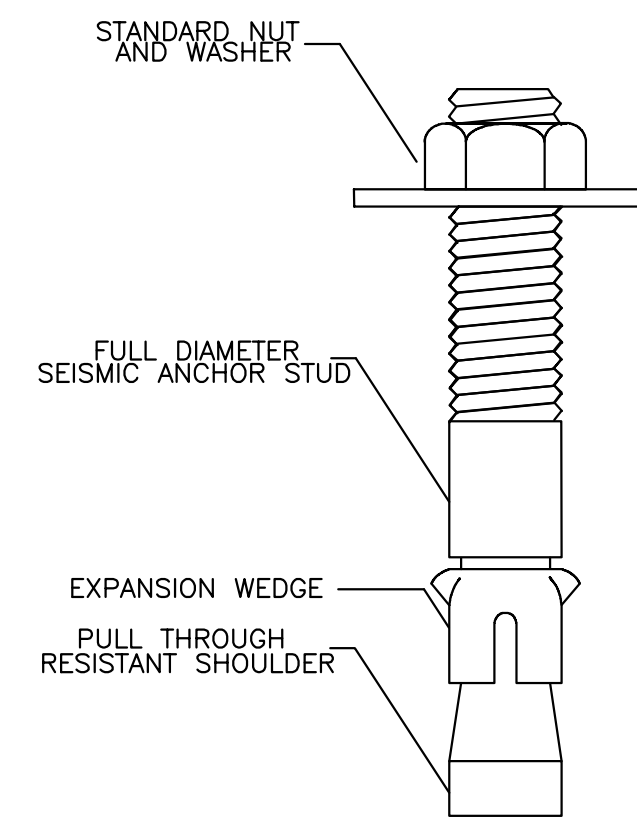
CCB CLEVIS CROSS BRACE
SPECIFICATION 15



Z1225 ALL DIRECTIONAL SEISMIC SNUBBER
SPECIFICATION 16



Z1011 ALL DIRECTIONAL SEISMIC SNUBBER
SPECIFICATION 17



SAS SEISMIC ANCHOR STUD
SPECIFICATION 18



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6TH FLOOR OFFICE RENOVATION
ARLINGTON HIGH SCHOOL
869 MASSACHUSETTS AVENUE
ARLINGTON, MA 02476

TITLE:

VIBRATION AND
SEISMIC

JOB NUMBER:

12-15

DRAWN BY:

RR

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BM

DATE:

March 27, 2013

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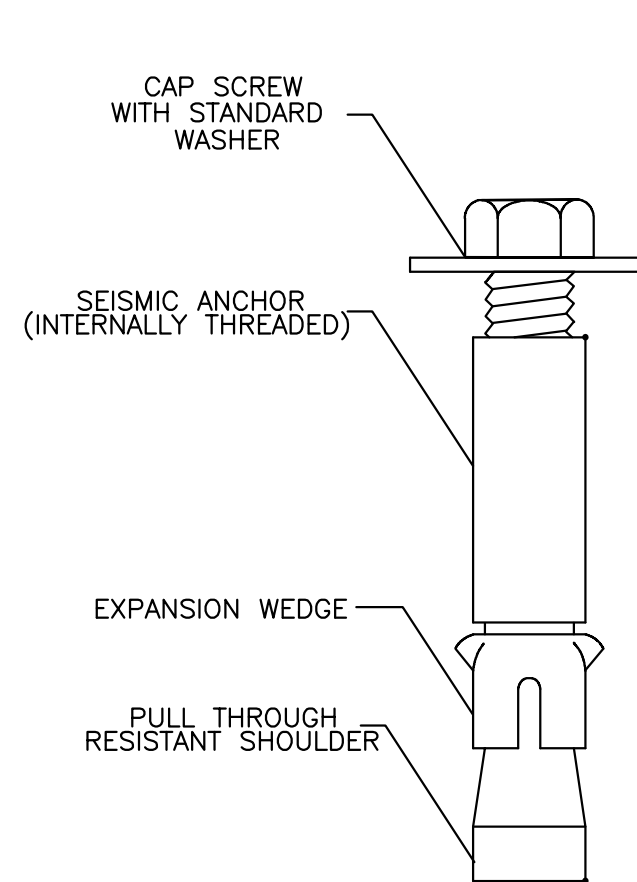
March 27, 2013

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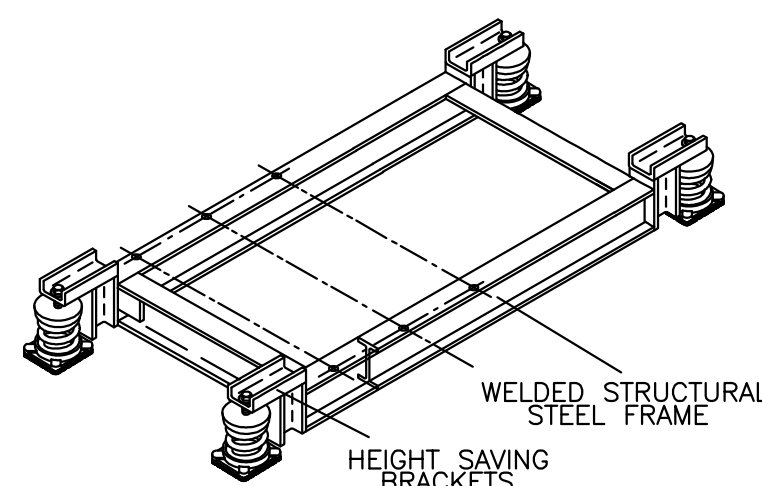
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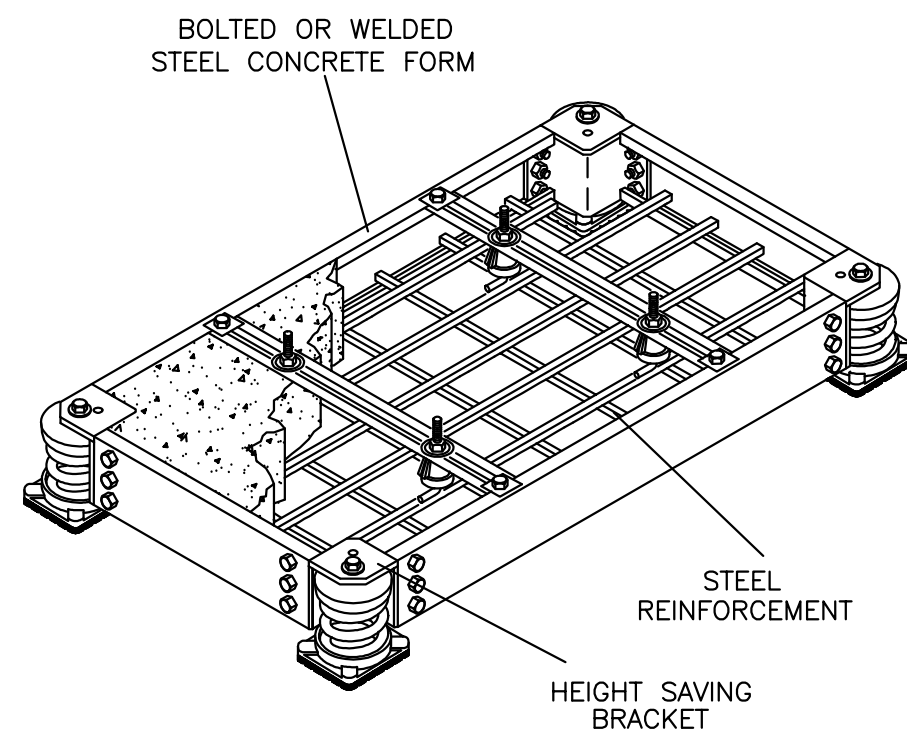
VS.2



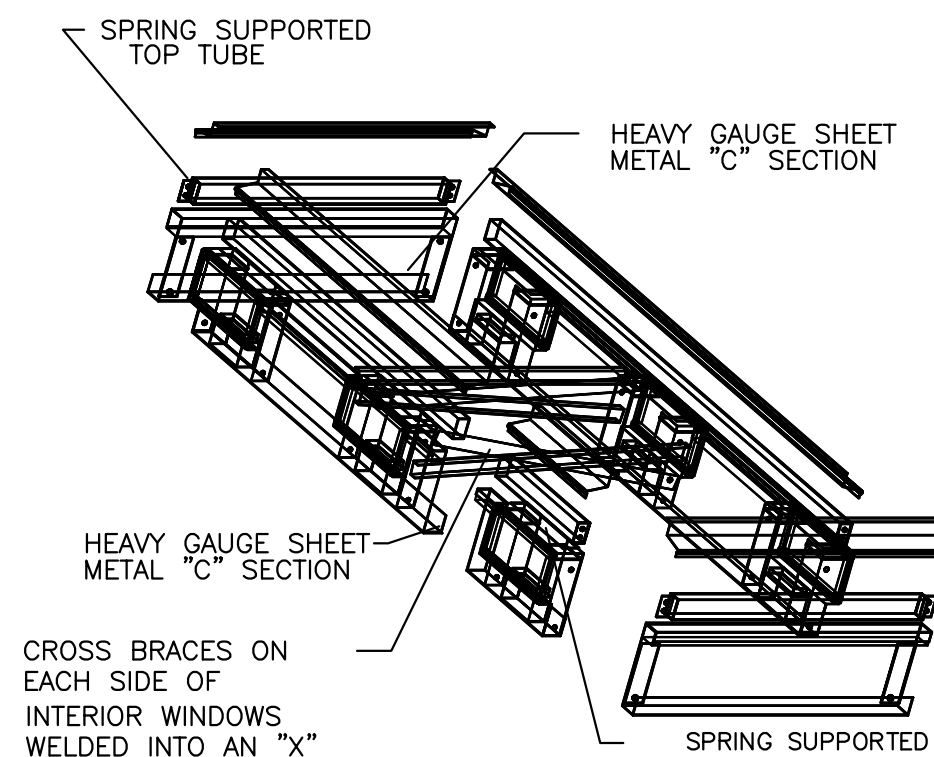
SAB SEISMIC ANCHOR BOLT
SPECIFICATION 19



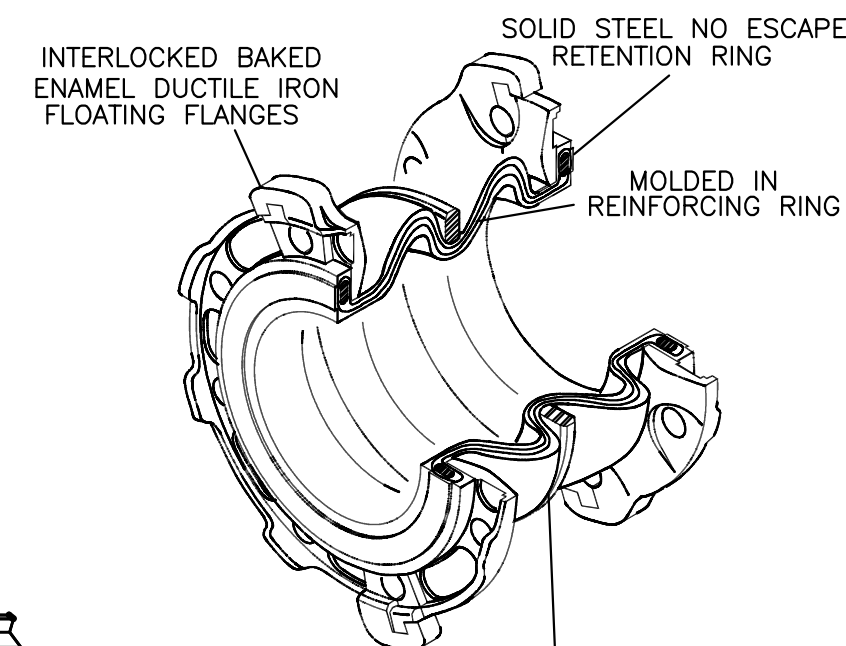
WF WIDE FLANGE STEEL BASE
SPECIFICATION 20



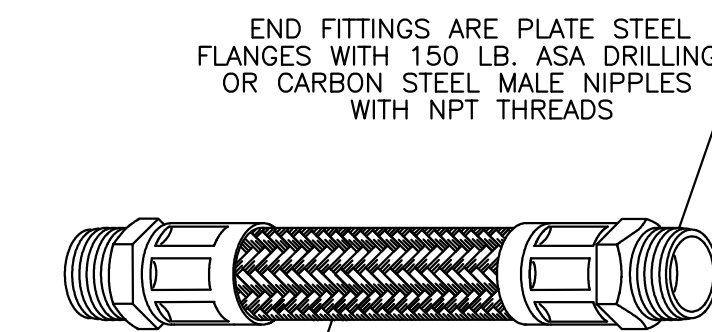
BMK CONCRETE FORM BASE
SPECIFICATION 21



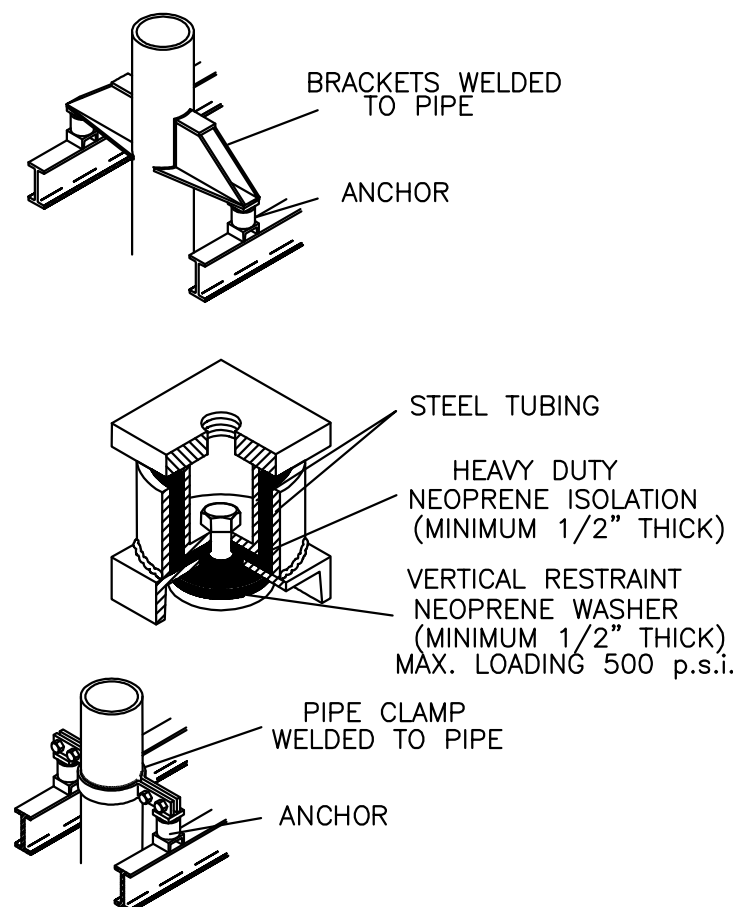
RSC SEISMIC ROOFTOP CURB
SPECIFICATION 22



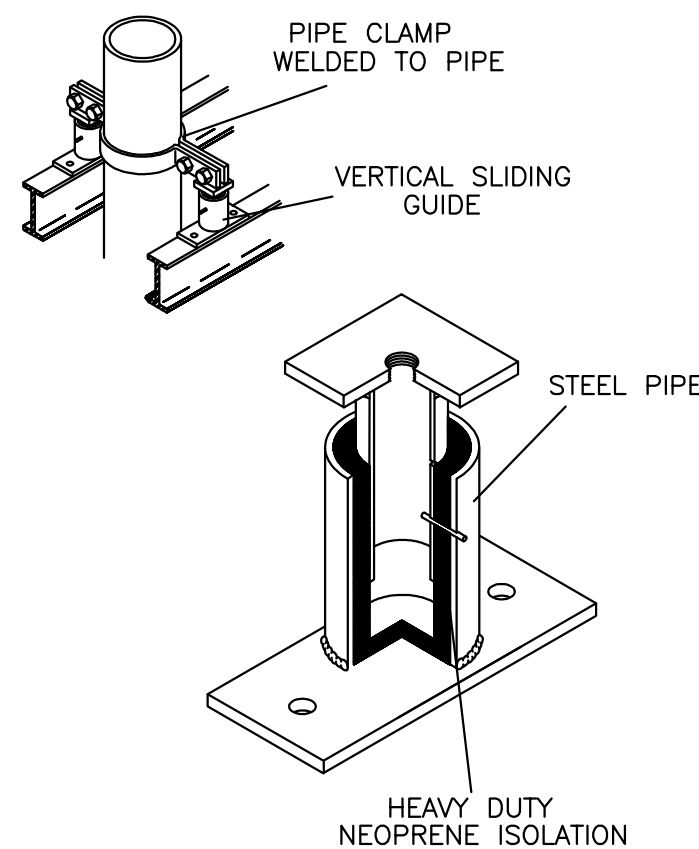
SFDEJ MOLDED EXPANSION JOINT
SPECIFICATION 23



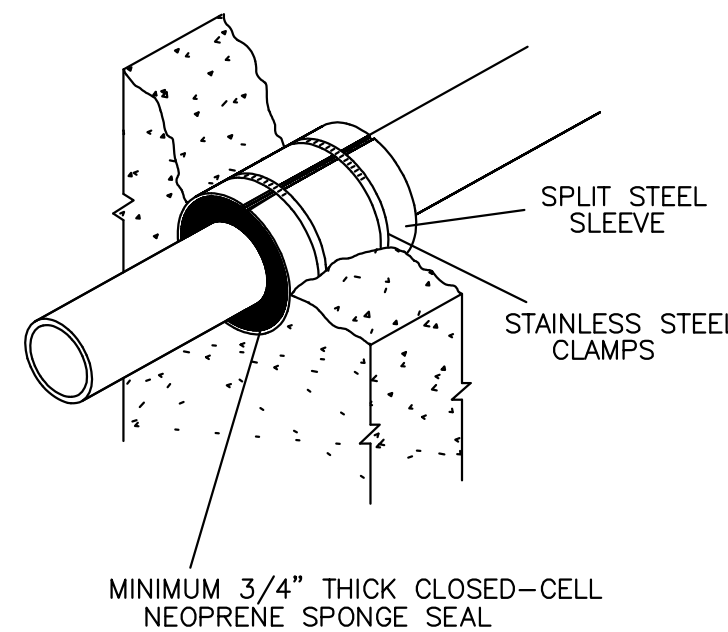
BSS STAINLESS STEEL HOSE
SPECIFICATION 24



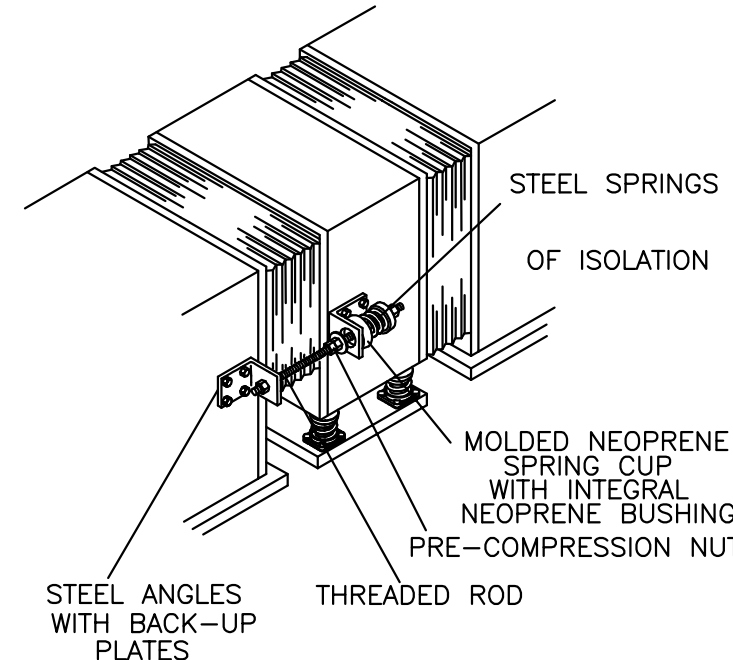
ADA ALL DIRECTIONAL ANCHOR
SPECIFICATION 25



VSG VERTICAL SLIDING GUIDES
SPECIFICATION 26



SWS ACOUSTICAL WALL, CEILING
OR FLOOR SEAL
SPECIFICATION 27



WB HORIZONTAL THRUST RESTRAINTS
USED IN PAIRS
SPECIFICATION 28

SYMBOL LIST

LEGEND NOTES:

THIS SHEET IS A GENERAL LIST OF SYMBOLS AND ABBREVIATIONS AND SHALL BE USED AS A DICTIONARY TO DEFINE ITEMS INDICATED ON DRAWINGS. NOT ALL SYMBOLS OR ABBREVIATIONS ARE NECESSARILY USED ON THIS PROJECT. ALL EQUIPMENT IS TO BE PROVIDED UNDER THIS SECTION UNLESS SPECIFICALLY INDICATED OTHERWISE.

POWER

	120/208 VOLT, 3 PHASE, 4 WIRE PANELBOARD.
	LIGHTING CONTACTOR
	CONTROL RELAY
	JUNCTION BOX - SIZE AS REQUIRED.
	MOTOR - NUMERAL INDICATES HORSEPOWER
	HEAVY DUTY FUSED DISCONNECT SWITCH) "3R" INDICATES NEMA 3R
	UNFUSED DISCONNECT SWITCH) EQUIPMENT) ENCLOSURE FOR EXTERIOR
	INDICATES SAFETY SWITCH SIZE
	INDICATES TIME DELAY FUSE SIZE.
	INTEGRAL CLASSROOM PANEL
	HORSEPOWER RATED THERMAL SWITCH WITH PILOT LIGHT

LIGHTING FIXTURES

(REFER TO SCHEDULE FOR TYPE AND MOUNTING)

	WALL MOUNTED LIGHT
	FLUORESCENT LIGHT FIXTURE, CEILING MOUNTED SURFACE OR RECESSED.
	EXIT SIGN UNIVERSAL MOUNTED SINGLE OR DOUBLE FACE AS INDICATED. EMERGLITE CAT LX1(2)-RC-(X)R-C-U
	SINGLE POLE SWITCH. (TYPICALLY MTD. 48" AFF-U.N.O)
	KEY OPERATED SWITCH
	CEILING MOUNTED OCCUPANCY SENSOR W/ SELF-CONTAINED POWER SUPPLY-DUAL TECHNOLOGY PASSIVE INFRARED / ULTRASONIC EQUAL TO HUBBELL #OMNI-DT2000-RP.
	EMERGENCY BATTERY UNIT WITH INTEGRAL HEADS.

FIRE ALARM SYSTEM

	CEILING MOUNTED PHOTOELECTRIC SMOKE DETECTOR.
	REMOTE ALARM INDICATOR
	VISUAL "ADA" COMPLIANT SIGNAL - MTD 80" AFF TO G.
	FIRE ALARM CONTROL PANEL.
	AUDIO/VISUAL "ADA" COMPLIANT SIGNAL - MTD 80" AFF TO G.
	DUCT TYPE SMOKE DETECTOR WITH SAMPLING TUBE. FURNISHED BY EC, INSTALLED BY HVAC, WIRED BY EC.
	THERMAL DETECTOR - 200°F FIXED TEMPERATURE.
	MANUAL PULL STATION - MTD 48" AFF TO G.
	MONITOR MODULE
	CONTROL MODULE

TECHNOLOGY

	DATA OUTLET - AT 18" A.F.F. UNO-SINGLE GANG OPENING AND 4"SQ. X 2 1/2"DP J.B. WITH 1"C. WITH PULL LINE TO NEAREST ACCESSIBLE CEILING SPACE. ALL SURFACE APPLICATIONS SHALL BE IN WIREMOLD. SURFACE RACEWAY SHALL BE PANDUIT PAR-WAY LD SURFACE RACEWAY SYSTEM OR EQUAL. MOUNTING DESIGNATIONS: "C"=ABOVE COUNTER. "R" INDICATES NUMBER OF JACKS. WIRING AND JACKS BY OWNER
	FLUSH MOUNTED WALL SPEAKER.

DOOR SECURITY SYSTEM

	POWER SUPPLY FOR MAGNETIC LOCKS AND ELECTRIC LOCKS FURNISHED @ DOOR BY DOOR HARDWARE CONTRACTOR. ELECTRICAL CONTRACTOR SHALL SUPPLY 120 VAC EMERGENCY CIRCUITS. TIE IN PER IECC EXACT REQUIREMENTS, WIRED & INSTALLED BY IECC CONTRACTOR.
	ELECTRIC LATCH RETRACTION DEVICE FURNISHED AND INSTALLED BY HARDWARE CONTRACTOR, WIRED BY IECC CONTRACTOR. E.C. TO PROVIDE 3/4" CONDUIT TO NEAREST ACCESSIBLE CEILING SPACE.
	ELECTROMAGNETIC LOCK - F&I BY HARDWARE, WIRED BY E.C.
	ELECTRIC LOCK FURNISHED AND INSTALLED BY HARDWARE CONTRACTOR, WIRED BY IECC CONTRACTOR. 3/4" CONDUIT AND PULL STRING BY E.C.
	4" SQ. x 2 1/2" DOOR JUNCTION BOX BY EC.

RECEPTACLES

(typically mtd. at 18" a.f.f., uno)

TYPICAL OUTLET NOTATIONS

"a"	= SWITCHED OUTLET, "a" - INDICATES SWITCH CONTROL.
"C"	= MOUNTED 6" ABOVE COUNTER OR 42" AFF. COORDINATE EXACT MOUNTING HEIGHT WITH ARCHITECTURAL DRAWINGS.
"GFC"	= GROUND FAULT INTERRUPTER TYPE MOUNTED AT 42" AFF.
"GFI"	= GROUND FAULT INTERRUPTER TYPE.
"H"	= HORIZONTALLY MOUNTED.

	20AMP 120VOLT DUPLEX OUTLET; "C" INDICATES MTD. @ 48" A.F.F. OR ABOVE COUNTER
	20AMP, 120 VOLT DOUBLE DUPLEX RECEPTACLE.

EXISTING EQUIPMENT

	DOTTED DENOTES EXISTING EQUIPMENT.
	EXISTING EQUIPMENT TO BE REMOVED AND CIRCUIT PULLED BACK TO NEXT ACTIVE OUTLET/BACK TO PANEL.
	EXISTING EQUIPMENT TO REMAIN.
	EXISTING EQUIPMENT TO BE REMOVED AND RELOCATED, PROVIDE ALL NEW WIRING
	NEW LOCATION OF RELOCATED EXISTING EQUIPMENT. PROVIDE ALL NEW WIRING.
	EXISTING EQUIPMENT TO BE REMOVED AND NEW EQUIPMENT INSTALLED IN SAME LOCATION. PROVIDE ALL NEW WIRING AND DEVICES.
	EXISTING EQUIPMENT TO BE DISCONNECTED AND RECONNECTED AT THE SAME LOCATION.

MECHANICAL EQUIPMENT

MOTOR - NUMERAL INDICATES HORSEPOWER
"P" - INDICATES PROJECTION SCREEN CONNECTION

MOTORIZED FIRE/SMOKE DAMPER FURN., INST. & WIRED BY HVAC.
FIRE ALARM SYSTEM INTERLOCK WIRING BY E.C.

ELECTRIC BASEBOARD HEATER F&I BY HVAC WIRED E.C.

CABINET HEATER - F & I BY HVAC, WIRED BY E.C.

UNIT HEATER - F & I BY HVAC, WIRED BY E.C.

EXHAUST FAN - F & I BY HVAC, WIRED BY E.C.

CONNECTION TO C.O. MONITOR - MIN. 3#14/MONITOR

TERMINAL BOX F&I BY HVAC WIRED BY E.C.

MOTORIZED DAMPER

WIRE AND RACEWAYS

WIRING AND RACEWAY - NO. OF DIAGONAL LINES INDICATES NO. #12 AWG. ABSENCE OF LINES INDICATES 2 #12 AWG+GR PROVIDE INSULATED GREEN GROUND WIRE WITH ALL BRANCH CIRCUITS (NOT INDICATED IN COUNT)

HOMERUN TO PANEL - NO. OF ARROWS INDICATES NO. OF 20 AMP/1 POLE CIRCUITS TO PANEL - UNLESS NOTED OTHERWISE.

ABBREVIATIONS

A.F.F.	ABOVE FINISHED FLOOR
ARCH.	ARCHITECT
A.T.C.	SUB AUTO-TEMP CONTROL CONTRACTOR
C	CENTERLINE
CL.G.	CEILING
E.C.	SUB ELECTRICAL CONTRACTOR
F&I	FURNISHED AND INSTALLED
G.C.	GENERAL CONTRACTOR
H.V.A.C.	SUB HEATING, VENTILATION, AND AIR CONDITIONING CONTRACTOR
W.P.	WEATHER PROOF
E.G.	EQUIPMENT GROUND SIZE PER NEC 250-95.

GENERAL DEMOLITION NOTES:

- REFER TO DEMOLITION SECTION OF SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
- WHERE DOWNSTREAM DEVICES ARE AFFECTED BY THE DEMOLITION WORK THIS CONTRACTOR SHALL PROVIDE NEW SERVICES AS REQUIRED TO MAINTAIN SUCH DOWNSTREAM DEVICES.
- ALL DEVICES AND/OR EQUIPMENT REMOVED BY THIS CONTRACTOR SHALL BE INSPECTED BY THE OWNER FOR DETERMINATION OF DISPOSAL OR STORAGE AS DIRECTED BY THE OWNER.
- IT IS NOT THE INTENTION OF THESE DRAWINGS TO SHOW ALL EQUIPMENT TO BE DISCONNECTED AND/OR REMOVED. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO VISIT THE SITE PRIOR TO SUBMITTING HIS/HER BID TO DETERMINE THE EXACT QUANTITY AND TYPES OF EQUIPMENT TO BE REMOVED.
- PARTICULAR CARE SHALL BE TAKEN TO AVOID CREATING HAZARDS ON THE PROJECT OR CAUSING DISRUPTION OF SERVICES REMAINING.
- ALL EXISTING EQUIPMENT INDICATED TO BE REMOVED SHALL BE DONE IN A NEAT AND WORKMANLIKE MANNER. ALL EXISTING EQUIPMENT INDICATED TO BE TURNED OVER TO THE OWNER SHALL BE PRESENTED TO THE OWNER IN GOOD CONDITION AT A LOCATION DESIGNED BY THE OWNER. ALL OTHER EQUIPMENT SHALL BE REMOVED FROM THE SITE.
- REMOVE ALL ABANDONED CONDUCTORS AND EQUIPMENT NOT BUILT INTO THE BUILDING CONSTRUCTION WHERE CEILING AND WALLS ARE REMOVED, ABANDONED WIRING SHALL BE REMOVED, AND ENDS OF LIVE SERVICES TO BE DISCONNECTED AND CUT-OFF.
- ABANDONED ELEMENTS BUILT INTO WALLS SHALL BE MARKED "ABANDONED".

BRANCH CIRCUIT NOTES:

- COORDINATE EXACT LOCATION OF ALL DEVICES AND EQUIPMENT WITH ENGINEER PRIOR TO INSTALLATION.
- REFER TO MECHANICAL PLANS FOR ANY CHANGES AND FOR EXACT LOCATION OF ALL MECHANICAL EQUIPMENT.
- WIRING IS SHOWN ON DRAWINGS ONLY FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
- WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
- ALTHOUGH ALL BRANCH CIRCUIT WIRE AND CONDUIT IS NOT SHOWN, IT IS THE INTENT OF THESE DOCUMENTS THAT A COMPLETE BRANCH CIRCUIT WIRING SYSTEM BE INSTALLED.
- ALL BRANCH CIRCUIT CONDUCTORS SHALL BE 98% CONDUCTIVITY, COPPER MINIMUM #12 AWG SIZE, THWN/THHN INSULATION, 600 VOLTS RATED UNLESS OTHERWISE NOTED.

GENERAL NOTES

- THE ELECTRICAL CONTRACTOR SHALL VISIT THE SITE TO DETERMINE ALL PRE-EXISTING CONDITIONS AND WORK NECESSARY PRIOR TO SUBMISSION OF BID PRICES.
- THE ELECTRICAL CONTRACTOR SHALL FAMILIARIZE HIMSELF WITH ALL CONTRACT DOCUMENTS, FOR ALL TRADES, MAKE ALL EQUIPMENT CONNECTIONS AND COORDINATE WITH OTHER TRADES.
- DRAWINGS ARE DIAGRAMMATIC ONLY; EXACT LOCATIONS, MOUNTING HEIGHTS OF EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED WITH THE EQUIPMENT REQUIREMENTS AND FIELD CONDITIONS.
- THE ELECTRICAL CONTRACTORS' SCOPE OF WORK SHALL INCLUDE, BUT NOT BE LIMITED TO, ALL ELECTRICAL POWER AND CONTROL REQUIREMENTS INDICATED.
- THE ELECTRICAL CONTRACTOR SHALL FURNISH AND INSTALL ALL INCIDENTAL ACCESSORIES NECESSARY TO MAKE THE ELECTRICAL WORK COMPLETE AND READY FOR OPERATION.
- BRANCH CIRCUITS SHALL BE INSTALLED IN THE FOLLOWING RACEWAYS:
 - A. CONCEALED ABOVE HUNG CEILINGS AND IN WALLS SHALL BE METAL CLAD CABLE (MC) WITH FULL SIZE INSULATED GREEN GROUND CONDUCTORS.
 - B. EXPOSED IN NON-FINISHED ROOMS (I.E. ELECTRIC ROOMS, MECHANICAL ROOMS, ETC.) SHALL BE E.M.T. MINIMUM SIZE 3/4" C. UNLESS SUBJECT TO DAMAGE, THEN RIGID STEEL.
 - C. FLEXIBLE METAL CONDUIT SHALL BE USED FOR ALL FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT.
- ALL ELECTRICAL WORK SHALL BE IN ACCORDANCE WITH OSHA, THE MASSACHUSETTS ELECTRICAL CODE AND LOCAL GOVERNING AUTHORITIES.
- RIGID STEEL CONDUIT AND ELECTRICAL METALLIC TUBING SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE.
- WIRE AND CONDUIT SIZE INDICATED ON HOMERUNS SHALL BE CONTINUOUS THROUGH CIRCUIT.
- THE ELECTRICAL CONTRACTOR SHALL USE CAUTION TO AVOID DAMAGE TO FEEDERS AND/OR HARM TO PERSONNEL ENGAGED IN WORKING IN THESE AREAS.
- A GROUNDING CONDUCTOR SHALL BE INCLUDED IN EACH RACEWAY OR CABLE, SIZED IN ACCORDANCE WITH THE MASSACHUSETTS ELECTRICAL CODE.
- RECONNECT ALL EXISTING CIRCUITING WHICH ORIGINATES OR PASSES THROUGH THE RENOVATED AREAS BUT SERVES OTHER AREAS NOT BEING RENOVATED. EXTEND THESE CIRCUITS AS MAY BE NECESSARY TO THE EXISTING PANELBOARDS. UTILIZE SPARE CIRCUIT BREAKERS.

LIGHTING FIXTURE SCHEDULE

ALL FIXTURES SHALL BE FURNISHED COMPLETE WITH ALL HARDWARE, LAMPS, HANGERS, FITTING, ETC., FOR A COMPLETE AND PROPER INSTALLATION.

TYPE	MANUFACTURER	CATALOG NO.	MTG.	VOLTAGE	LAMPS		TYPE	REMARKS
					No.	WATTAGE		
F24	LITHONIA	2RT5-28T5-MVOLT-GE895-LPM835P	R	120	2	28	F28T5/3500K	2' x 4' TROFFER
FP4	CORELITE	I2-SF-1T5-1C-UNV-AC48-ST-4	PENDANT	120	1	54	F054HO/3500K	4' PENDANT LIGHTING
FP8	CORELITE	I2-SF-1T5-1C-UNV-AC48-ST-8	PENDANT	120	2	54	F054HO/3500K	8' PENDANT LIGHTING
FP4A	CORELITE	MB-SW-1T5-1C-UNV-AC48-ST-4	PENDANT	120	1	54	F054HO/3500K	DELETE UNDER ALTERNATE #2
FP8A	CORELITE	MB-SW-1T5-1C-UNV-AC48-ST-8	PENDANT	120	2	54	F054HO/3500K	DELETE UNDER ALTERNATE #2
	EMERGI-LITE	I2PR40NC-2-LG-D	W	120	2	4	LED	EMERGENCY BATTERY UNIT W/2 HEADS
	EMERGI-LITE	WW-PXN-1,2-R	U	120	2	2.8	LED	EXIT SIGN

- ① LIGHT FIXTURES IN GRANTS ROOM SHALL BE PROVIDED WITH FULL SPECTRUM FLUORESCENT LAMPS EQUAL TO BLUE MAX #5900-F54TSHO.

LIGHTING GENERAL NOTES

- FURNISH ALL LIGHTING FIXTURES COMPLETE WITH MOUNTING ACCESSORIES TO MEET THE JOB REQUIREMENTS. VERIFY CEILING AND GRID TYPE PRIOR TO ORDERING FIXTURES. REFER TO LATEST ARCHITECTURAL DRAWINGS.
- VERIFY ALL FIXTURE MOUNTING HEIGHTS AND LOCATIONS WITH LATEST ARCHITECTURAL PLANS, ELEVATIONS, SECTION AND DETAIL DRAWINGS. EXACT LOCATION OF FIXTURES SHALL BE CONFIRMED WITH THE ARCHITECT PRIOR TO ROUGHING.
- DESCRIPTIONS AND NOTES MAY INDICATE ITEMS THAT ARE NOT INDICATED IN THE CATALOG NUMBER. SUBSTITUTIONS SUBMITTED SHALL BE DOCUMENTED AS EQUAL IN PERFORMANCE AND APPEARANCE TO THE SPECIFIED ITEM.
- COMPACT FLUORESCENT LAMPS SHALL HAVE 3500 KELVIN COLOR TEMPERATURE WITH A COLOR RENDERING INDEX OF 82 MINIMUM. COMPACT FLUORESCENT LAMPS SHALL BE THE AMALGAM TYPE, SYLVANIA DULUX T8/IN OR EQUAL. COMPACT FLUORESCENT BALLASTS SHALL BE SYLVANIA QUICKTRONIC CF SERIES OR EQUAL BY ADVANCE, GE, OR LUTRON.
- LINEAR FLUORESCENT LAMPS SHALL HAVE 3500 KELVIN COLOR TEMPERATURE WITH A COLOR RENDERING INDEX OF 85 MINIMUM. T8HO LAMPS SHALL BE THE ENERGY SAVER TYPE, SYLVANIA PENTRON HO SUPERSAVER ECOLOGIC OR EQUAL. ALL T5 LAMPS SHALL BE THE ENERGY SAVER TYPE, SYLVANIA PENTRON SUPERSAVER ECOLOGIC OR EQUAL. T5 AND T8HO BALLASTS SHALL BE HIGH EFFICIENCY TYPE, SYLVANIA QHE SERIES OR EQUAL BY ADVANCE, GE, OR LUTRON.
- LINEAR ROWS OF RECESSED OR SUSPENDED FLUORESCENT LUMINAIRES SHALL BE INSTALLED TO PROVIDE A CONTINUOUS ROW AS INDICATED ON THE DRAWINGS. PROVIDE ALL REQUIRED CONNECTORS AND END PIECES, SO THAT HOUSINGS ARE A COMPLETE ASSEMBLY WITH THE APPEARANCE OF A SINGLE UNIT. BALLASTS AND LAMP PINS SHALL BE FACTORY PRE-WIRED FOR SWITCHING AND CIRCUITING AS INDICATED ON THE DRAWINGS. HANGER STYLE SHALL BE AS SELECTED BY THE ARCHITECT (IE: AIRCRAFT CABLE WITH STRAIGHT CORD). PROVIDE CANOPIES FOR LOCATIONS WHERE HANGER MOUNTS TO UNFINISHED CEILING STRUCTURE (WHERE VISIBLE) AND WHERE PASSING THROUGH SUSPENDED CEILINGS. ENTIRE ASSEMBLY SHALL BE SUPPLIED BY SAME MANUFACTURER. COORDINATE WITH FIXTURE SUPPLIER. PROVIDE SWIVEL ALIGNERS WHERE REQUIRED FOR SLOPED CEILINGS.
- FINISH COLOR FOR ALL FIXTURES, UNLESS SPECIFICALLY INDICATED SHALL BE SELECTED OR CONFIRMED BY THE ARCHITECT FROM MANUFACTURER'S STANDARD COLORS.
- FIXTURES SHALL BE SUPPORTED FROM THE BUILDING STRUCTURE, INDEPENDENT OF HUNG CEILING. REFER TO SPECIFICATIONS.
- PROVIDE TYPE AND QUANTITY OF BALLASTS, DRIVERS, AND TRANSFORMERS AS REQUIRED TO PROVIDE CONTROL METHOD INDICATIONS ON THE PLANS, INCLUDING BUT NOT LIMITED TO THE FOLLOWING: SWITCHING SUBSCRIPTS, NOTES, SCHEDULE REMARKS / DESCRIPTIONS, AND DETAILS. QUANTITY OF BALLASTS, DRIVERS, AND TRANSFORMERS SHALL BE THE MINIMUM REQUIRED TO PROVIDE CONTROL INDICATED TO MAINTAIN THE LOWEST CONNECTED LOAD OF LIGHTING SYSTEM POSSIBLE. TANDEM WIRING OF FIXTURES SHALL BE PROVIDED WHERE NECESSARY AND WITHIN THE WIRING DISTANCE RESTRICTIONS OF THE MANUFACTURER'S INSTALLATION REQUIREMENTS.
- LAMPS AND BALLASTS PROVIDED SHALL MEET THE LATEST UTILITY COMPANY INCENTIVE REQUIREMENTS. COORDINATE WITH THE UTILITY COMPANY.
- EXIT SIGNS TO BE PROVIDED WITH ARROWS AS INDICATED ON DRAWINGS. TYPICALLY MOUNT ON CEILING WHERE VISIBLE OR ON WALL WHERE CEILING MOUNTING IS NOT PRACTICAL. REFER TO ARCHITECTURAL PLANS AND ELEVATIONS FOR SPECIFIC MOUNTING DIRECTIONS.



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NO.

DATE:

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TITLE:

SYMBOL LIST,
LIGHTING FIXTURE
SCHEDULE AND
NOTES

JOB NUMBER:

12-15

DRAWN BY:

AD

CHECKED BY:

JR

DATE:

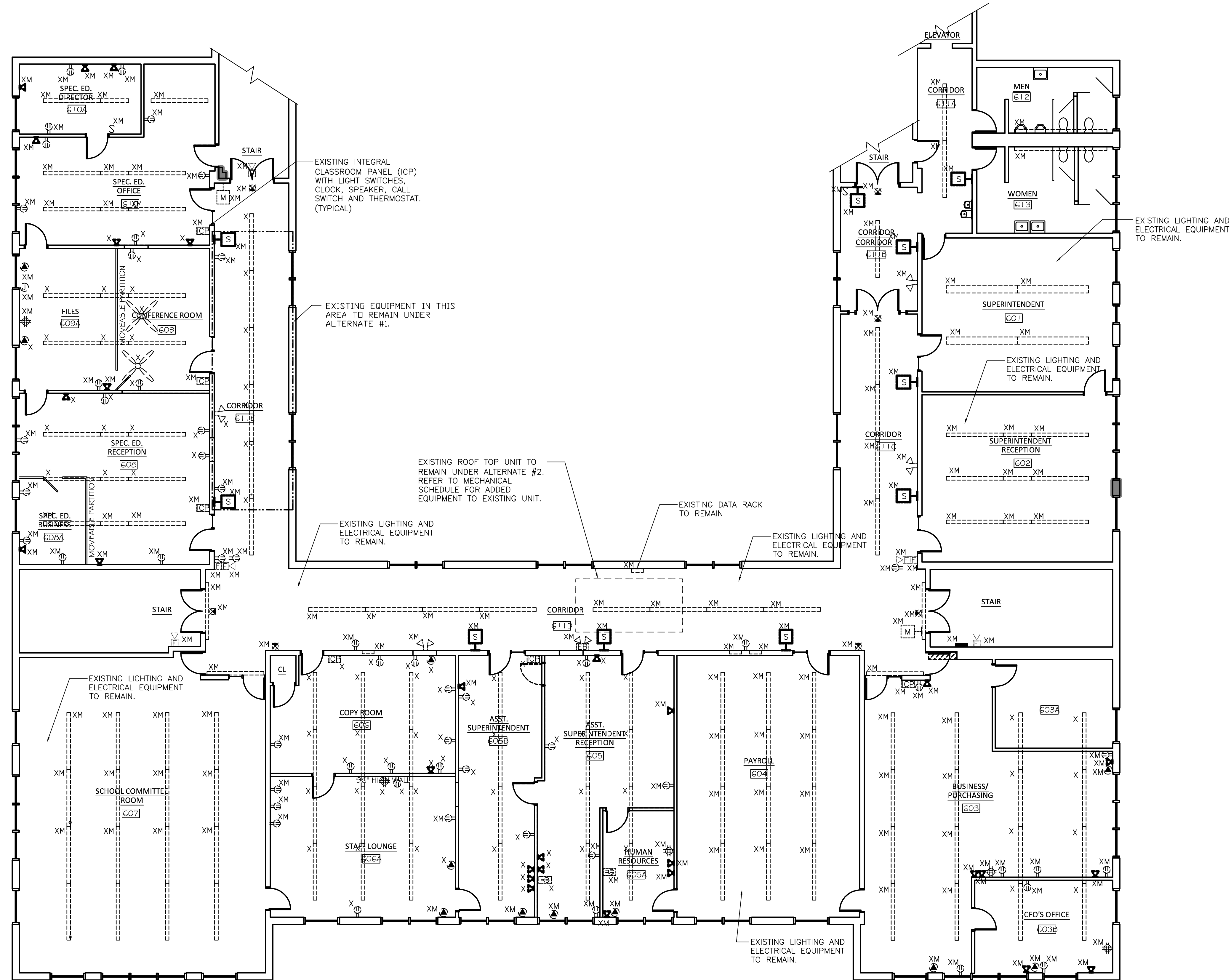
March 27, 2013

SCALE:

AS NOTED

SHEET NO:

E0.1



GENERAL DEMOLITION NOTES:

1. REFER TO DEMOLITION SECTION OF SPECIFICATION FOR ADDITIONAL REQUIREMENTS.
2. WHERE DOWNSTREAM DEVICES ARE AFFECTED BY THE DEMOLITION WORK THIS CONTRACTOR SHALL PROVIDE NEW SERVICES AS REQUIRED TO MAINTAIN SUCH DOWNSTREAM DEVICES.
3. ALL DEVICES AND/OR EQUIPMENT REMOVED BY THIS CONTRACTOR SHALL BE INSPECTED BY THE OWNER FOR DETERMINATION OF DISPOSAL OR STORAGE AS DIRECTED BY THE OWNER. FOR PURPOSES OF PRICING THIS CONTRACTOR SHALL ASSUME THAT NO DEVICE OR EQUIPMENT WILL BE RE-USED UNLESS SPECIFICALLY NOTED AS SUCH.
4. IT IS NOT THE INTENTION OF THESE DRAWINGS TO SHOW ALL EQUIPMENT TO BE DISCONNECTED AND/OR REMOVED. IT SHALL BE THE RESPONSIBILITY OF THIS CONTRACTOR TO VISIT THE SITE PRIOR TO SUBMITTING HIS/HER BID TO DETERMINE THE EXACT QUANTITY AND TYPES OF EQUIPMENT TO BE REMOVED.
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7. REMOVE ALL ABANDONED CONDUCTORS AND EQUIPMENT NOT BUILT INTO THE BUILDING CONSTRUCTION. WHERE CEILING AND WALLS ARE REMOVED, ABANDONED WIRING SHALL BE REMOVED, AND ENDS OF LIVE SERVICES TO BE DISCONNECTED AND CUT-OFF.
8. ABANDONED ELEMENTS BUILT INTO WALLS SHALL BE MARKED "ABANDONED".
9. NEW BLANK COVER PLATES SHALL BE PROVIDED ON ALL RECESSED OUTLET BOXES OF ELECTRICAL EQUIPMENT THAT IS BEING REMOVED WHERE WALLS AND CEILINGS ARE REMAINING.
10. DISCONNECT AND DROP EQUIPMENT TO FLOOR FOR REMOVAL BY GENERAL CONTRACTOR.

1 DEMOLITION PLAN - ELECTRICAL

ED1-1 SCALE: 1/8"=1'-0"



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TITLE:
DEMOLITION PLAN
ELECTRICAL

JOB NUMBER:
12-15

DRAWN BY:
AD

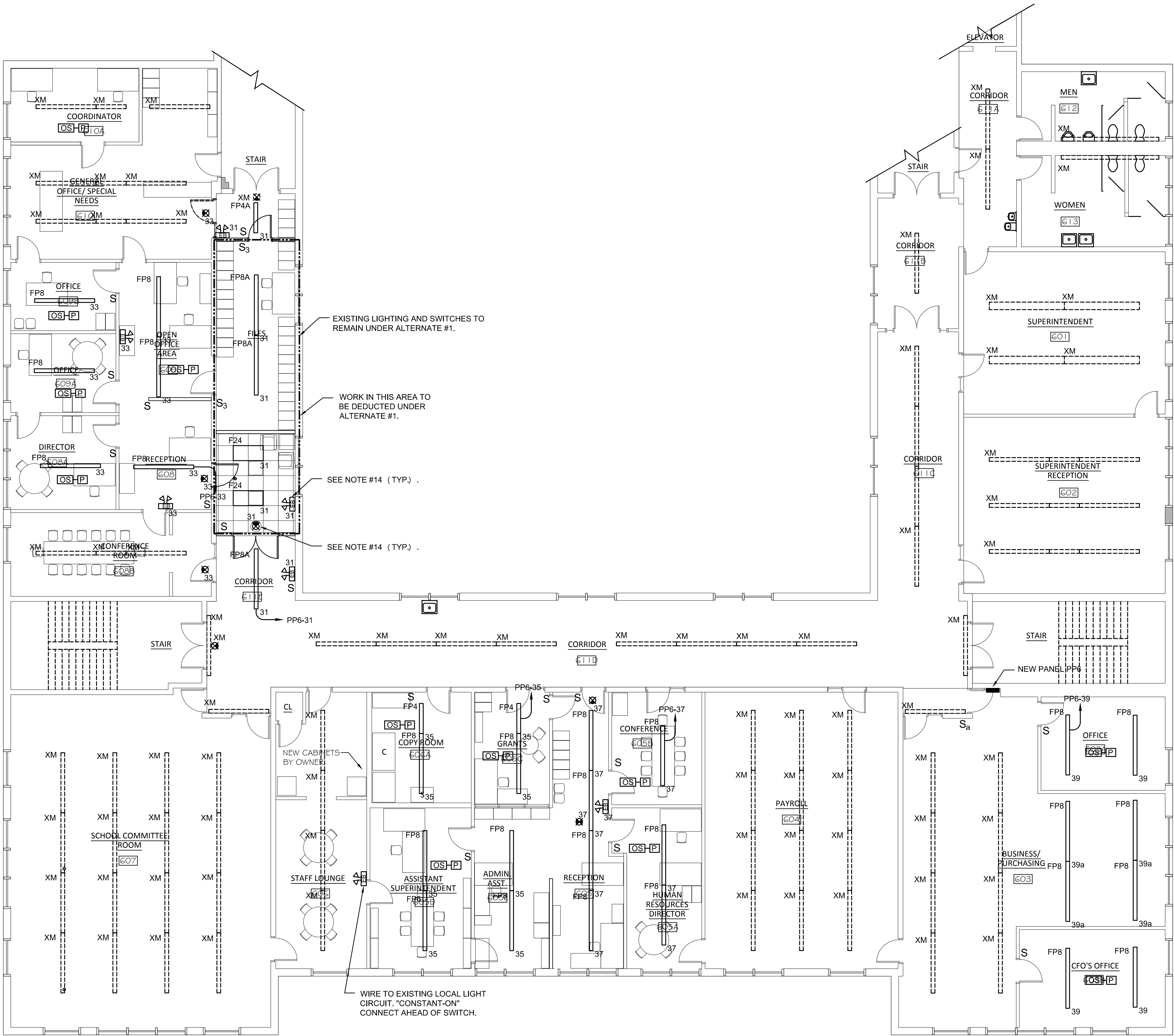
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JR

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SCALE:
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WIRING NOTES:

1. WIRING IS INDICATED ON DRAWINGS ONLY FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
2. WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
3. ALL SWITCH CONTROLS SHALL BE PROVIDED WITH WIRING AND CONDUIT AS REQUIRED.
4. ALTHOUGH ALL BRANCH CIRCUIT WIRE AND CONDUIT IS NOT SHOWN, IT IS THE INTENT OF THESE DOCUMENTS THAT A COMPLETE BRANCH CIRCUIT WIRING SYSTEM BE PROVIDED.
5. RACEWAYS SHALL BE LIMITED TO FOUR CURRENT CARRYING CONDUCTORS AND GROUNDING CONDUCTOR, UNLESS OTHERWISE INDICATED.
6. COORDINATE EXACT LOCATION OF ALL DEVICES AND EQUIPMENT WITH ARCHITECT PRIOR TO INSTALLATION.
7. REFER TO MECHANICAL PLANS FOR ANY CHANGES AND FOR EXACT LOCATION OF ALL HVAC EQUIPMENT.
8. ALL BRANCH CIRCUIT CONDUCTORS SHALL BE 98% CONDUCTIVITY, COPPER MINIMUM #12 AWG SIZE, THWN/THHN INSULATION, 600 VOLTS RATED UNLESS OTHERWISE NOTED.
9. DO NOT PENETRATE STAIRS WITH ANY UTILITIES EXCEPT FOR UTILITIES SPECIFICALLY SERVING THAT STAIR.
10. CONFIRM RATINGS & FINAL LOCATIONS OF EQUIPMENT WITH OWNER PRIOR TO ROUGHING.
11. ALL OUTLETS ON EXTERIOR WALLS WITH ALL OUTLETS ON CASEWORK/FINTUBE SHALL BE MOUNTED 6" ABOVE CASEWORK/FINTUBE. CONFIRM HEIGHT OF CASEWORK/FINTUBE WITH THE HVAC ENGINEER AND ARCHITECT PRIOR TO ROUGHING.
12. DO NOT TAP METAL ROOF DECK FOR SUPPORT OF ANY ELECTRICAL EQUIPMENT. PROVIDE UNISTRUT AS REQUIRED FOR SUPPORT OF ALL ELECTRICAL EQUIPMENT.
13. PROVIDE PULL STRINGS IN ALL EMPTY CONDUITS.
14. "CONSTANT-ON" CONNECT AHEAD OF SWITCHES.

2
E1-1
NEW LIGHTING PLAN - ELECTRICAL
SCALE: 1/8"=1'-0"



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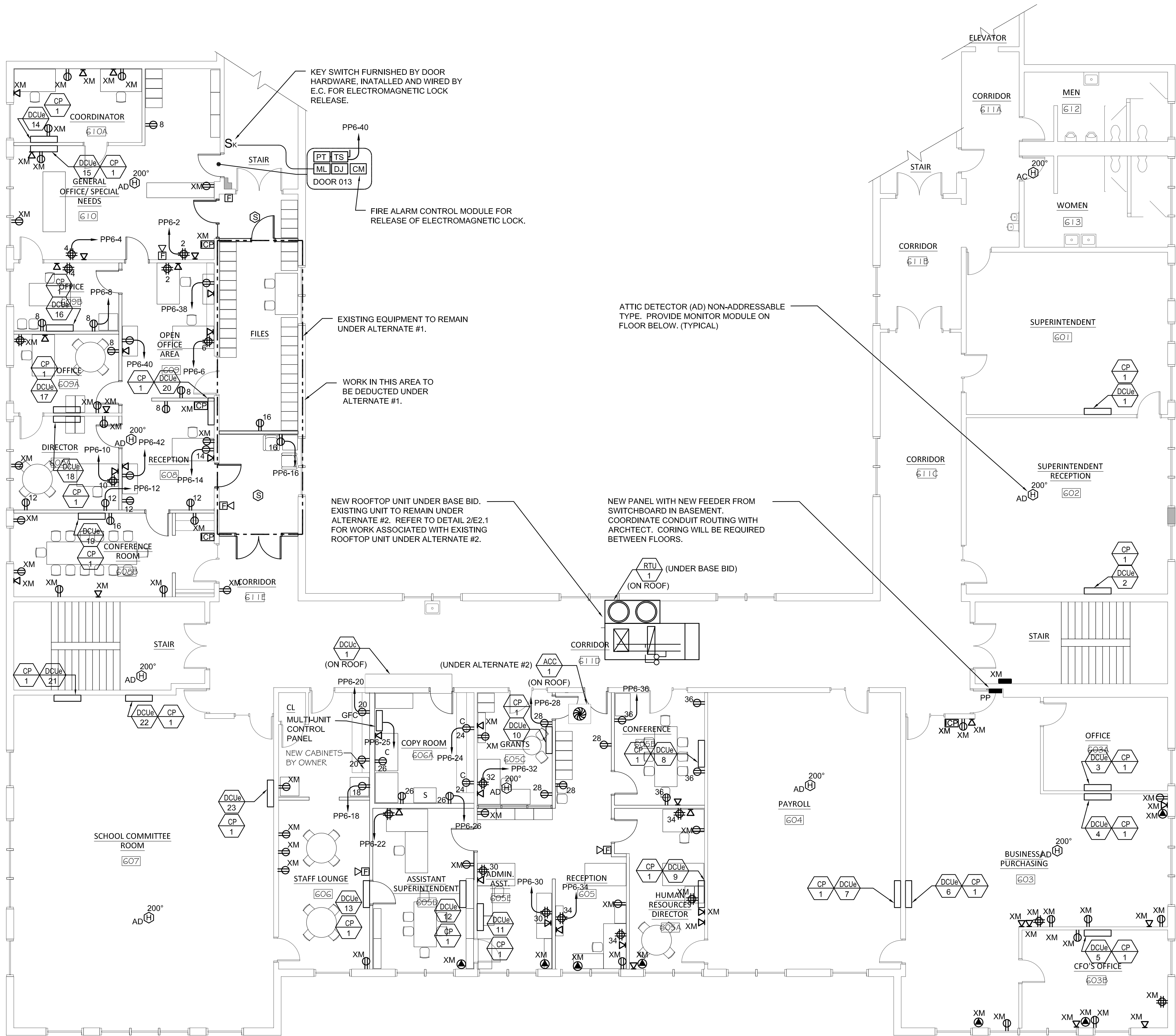
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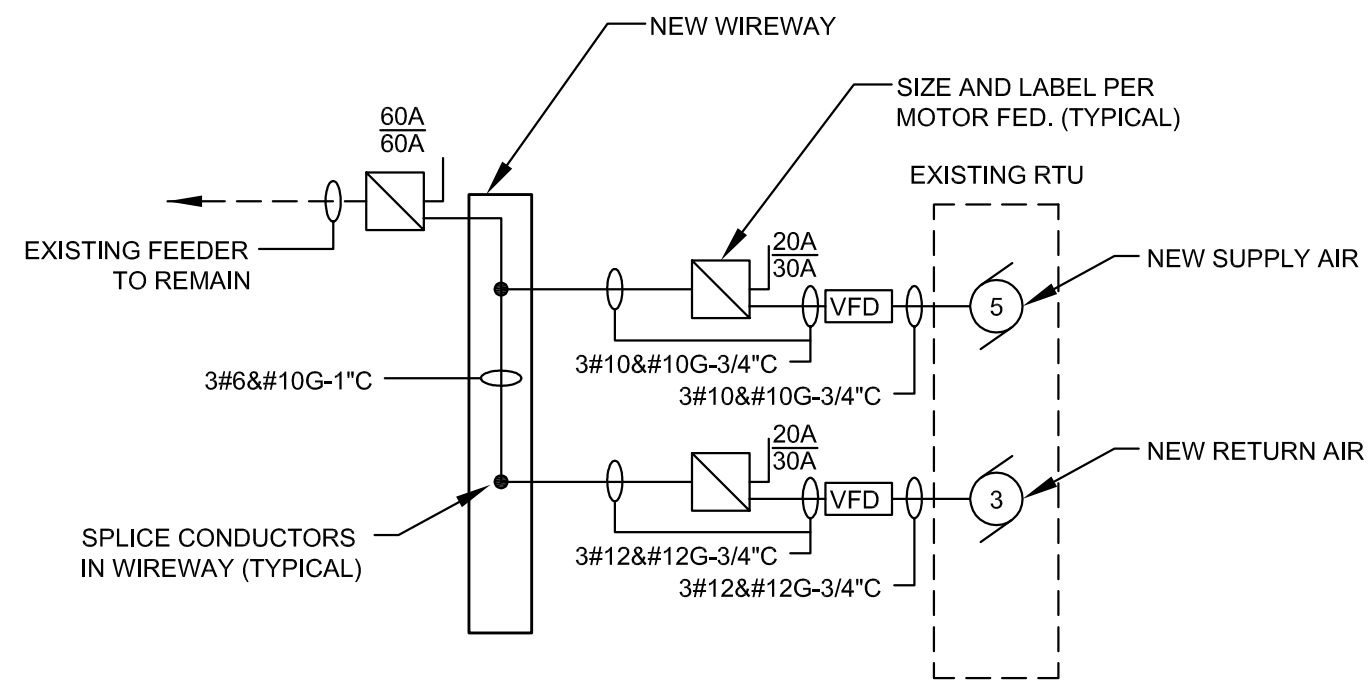
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AD
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JR
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SHEET NO:

E1.1



1 NEW POWER PLAN - ELECTRICAL
E2.1 SCALE: 1/8"=1'-0"



2 EXISTING ROOF TOP UNIT - (UNDER ALTERNATE #2)
E2.1 SCALE: N.T.S.

WIRING NOTES:

1. WIRING IS INDICATED ON DRAWINGS ONLY FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
2. WIRING AND CONDUIT SHALL BE REQUIRED BETWEEN ALL OUTLETS INDICATED WITH CIRCUIT NUMBERS AND PANEL DESIGNATIONS.
3. ALL SWITCH CONTROLS SHALL BE PROVIDED WITH WIRING AND CONDUIT AS REQUIRED.
4. ALTHOUGH ALL BRANCH CIRCUIT WIRE AND CONDUIT IS NOT SHOWN, IT IS THE INTENT OF THESE DOCUMENTS THAT A COMPLETE BRANCH CIRCUIT WIRING SYSTEM BE PROVIDED.
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11. ALL OUTLETS ON EXTERIOR WALLS WITH ALL OUTLETS ON CASEWORK/FINTUBE SHALL BE MOUNTED 6" ABOVE CASEWORK/FINTUBE. CONFIRM HEIGHT OF CASEWORK/FINTUBE WITH THE HVAC ENGINEER AND ARCHITECT PRIOR TO ROUGHING.
12. DO NOT TAP METAL ROOF DECK FOR SUPPORT OF ANY ELECTRICAL EQUIPMENT. PROVIDE UNISTRUT AS REQUIRED FOR SUPPORT OF ALL ELECTRICAL EQUIPMENT.
13. PROVIDE PULL STRINGS IN ALL EMPTY CONDUITS.



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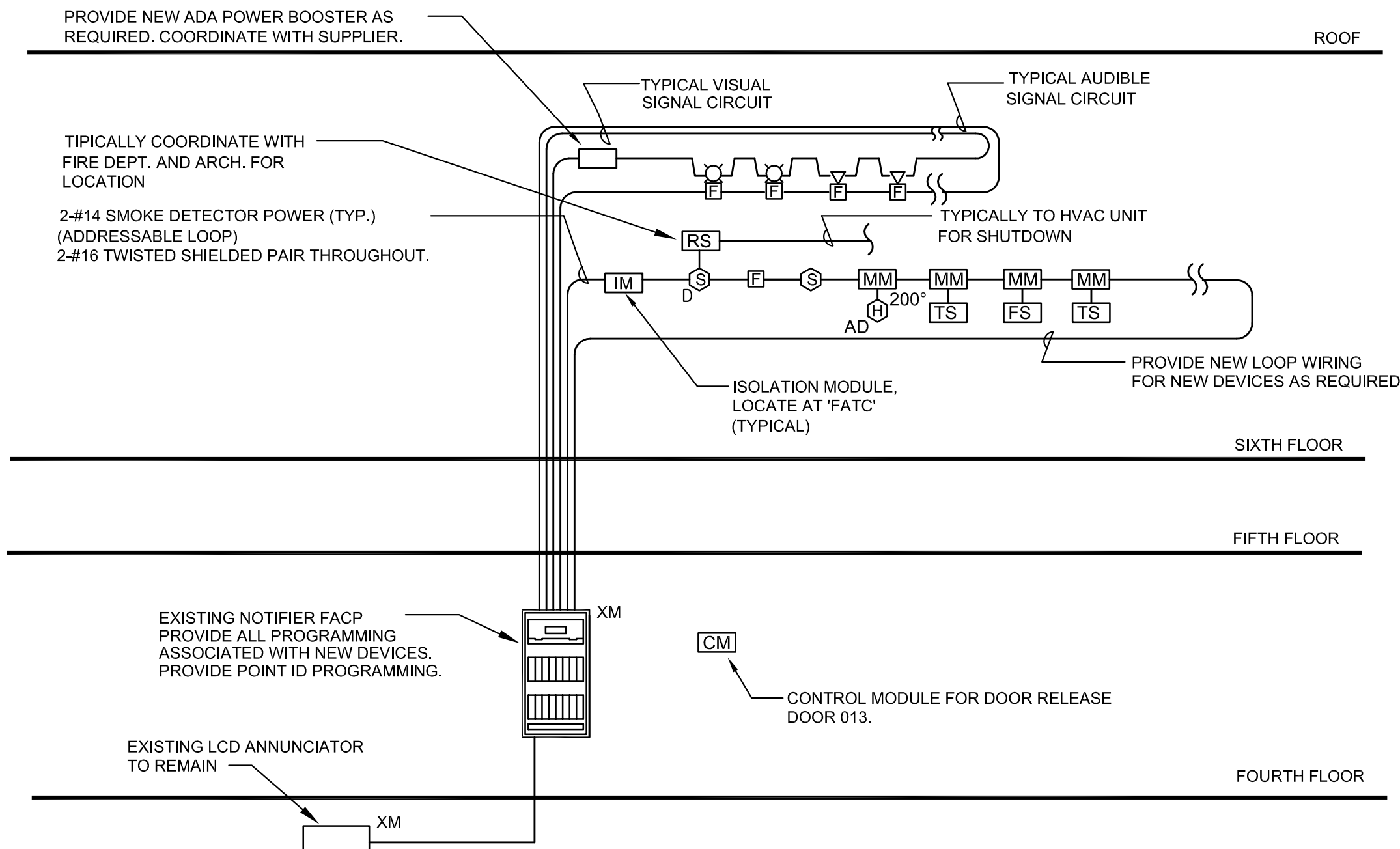
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E2.1



1 PARTIAL FIRE ALARM RISER DIAGRAM

E3.1 SCALE: N.T.S.

FIRE ALARM NOTES:

- E.C. SHALL REFER TO SPECIFICATIONS AND DRAWINGS FOR QUANTITY OF DEVICES, SPARE CAPACITY, PARTS, ETC.
- E.C. SHALL REFER TO HVAC DRAWINGS FOR EXACT LOCATION OF UNITS AND FOR LOCATIONS OF DUCT MOUNTED SMOKE DETECTORS. DUCT DETECTORS FURNISHED AND WIRED BY E.C.; INSTALLED BY HVAC.
- TYPICALLY FIRE ALARM SYSTEM SIGNAL CONDUCTORS SHALL BE #14 AWG MINIMUM, TYPE THHN SOLID FOR SIGNAL CIRCUITS.
- TYPICALLY ALL AUDIBLE/STROBE UNITS SHALL BE WIRED SO THAT THE AUDIBLE CAN BE SILENCED AND THE STROBES WILL REMAIN FLASHING UNTIL RESET.
- ALL AUDIBLE/STROBES SHALL BE MULTI-TAPPED TYPE, E.C. SHALL OWN & ADJUST DURING FIRE DEPARTMENT TESTING.
- ALL AUDIBLE/STROBES SHALL BE MOUNTED IN ACCORDANCE WITH ADA ROOM SPACING ALLOCATION TABLES FOR VISUAL SIGNALING DEVICES.
- PROVIDE CONTROL MODULES TO OVERRIDE MAGLOCKS. REFER TO FLOOR PLAN FOR EXACT LOCATION AND QUANTITIES.
- ALL DEVICES SHALL BE LABELED WITH CLEAR TAPE WITH BLACK INK. LABEL SHALL IDENTIFY LOOP# AND DEVICE NUMBER.
- ALL REMOTE TEST STATIONS SHALL BE KEYED AND MOUNTED ADJACENT TO FACP OR AS DIRECTED BY LOCAL FIRE DEPT. LABEL EACH UNIT.
- PULL STATIONS SHALL BE DOUBLE ACTION. PROVIDE TAMPER RESISTANT PLASTIC COVERS WHERE REQUIRED BY FIRE DEPT.
- AV DEVICES SHALL NOT BE INSTALLED WITHIN TACK/MARKER BOARDS, LOCKERS, ETC. COORDINATE EXACT LOCATION OF ALL AV DEVICES WITH ARCH. PRIOR TO INSTALLING.
- PRIOR TO SUBMITTING SHOP DRAWINGS, COORDINATE WITH LOCAL FIRE DEPT. FOR EXACT REQUIREMENTS. OBTAIN FIRE PREVENTION RULES AND REGULATIONS AND COMPLY IN FULL.
- COORDINATE WITH SYSTEM MANUFACTURER FOR WIRING REQUIREMENTS.
- ALL DETECTION & SIGNAL WIRING SHALL BE CLASS "A".
- SUBMIT AS PART OF SHOP DRAWINGS COMPLETE FLOOR PLANS & RISERS WITH ALL DEVICES SHOWN AND WITH DEVICE ADDRESSES.
- PROVIDE ISOLATION MODULE FOR EVERY 20 DEVICES. TYPICAL.

SPACING ALLOCATION FOR WALL-MOUNTED VISUAL ALARMS

MINIMUM REQUIRED LIGHT OUTPUT, CANDELA (I) (EFFECTIVE INTENSITY)			
MAXIMUM AREA OF COVERAGE	ONE LIGHT PER AREA	TWO LIGHTS PER AREA	FOUR LIGHTS PER AREA
20' x 20'	15	NOT PERMITTED	NOT PERMITTED
30' x 30'	30	15	NOT PERMITTED
40' x 40'	60	30	NOT PERMITTED
50' x 50'	95	60	NOT PERMITTED
60' x 60'	135	95	NOT PERMITTED
70' x 70'	185	135	NOT PERMITTED
80' x 80'	240	185	NOT PERMITTED
90' x 90'	305	240	60
100' x 100'	375	305	95
110' x 110'	455	375	135
120' x 120'	540	455	185
130' x 130'	635	540	

ROOM SPACING ALLOCATION FOR WALL-MOUNTED VISIBLE SIGNALING APPLIANCES

MAXIMUM ROOM SIZE (FT)	ONE LIGHT (CD)	TWO LIGHTS OPPOSITE WALLS (CD)	ONE LIGHT PER WALL (CD)
20' x 20'	15	-	-
30' x 30'	30	15	-
40' x 40'	60	30	-
50' x 50'	95	60	-
60' x 60'	135	95	-
70' x 70'	185	135	-
80' x 80'	240	185	60
90' x 90'	305	240	95
100' x 100'	375	305	135
110' x 110'	455	375	185
120' x 120'	540		
130' x 130'	635		

PANEL SCHEDULE

PANEL NO.	LOCATION	MTG	MAIN BUS AMPS	MAIN CB	BRANCH CKT BREAKER (AMPS)										TOTAL POLES	OTHERS	
					1 POLE		2 POLE		3 POLE								
					15	20	30	15	20	50	15	20	30	50			
PP6	SIXTH FLOOR	S	100	MLO	-	29	-	-	5	-	-	-	-	-	-	42	
PA	SECOND FLOOR	S	400	MLO												-	(1) 100A/3
DA	SECOND FLOOR	S	1200	MLO											1	-	(1) 40A/3 & (1) 60A/3

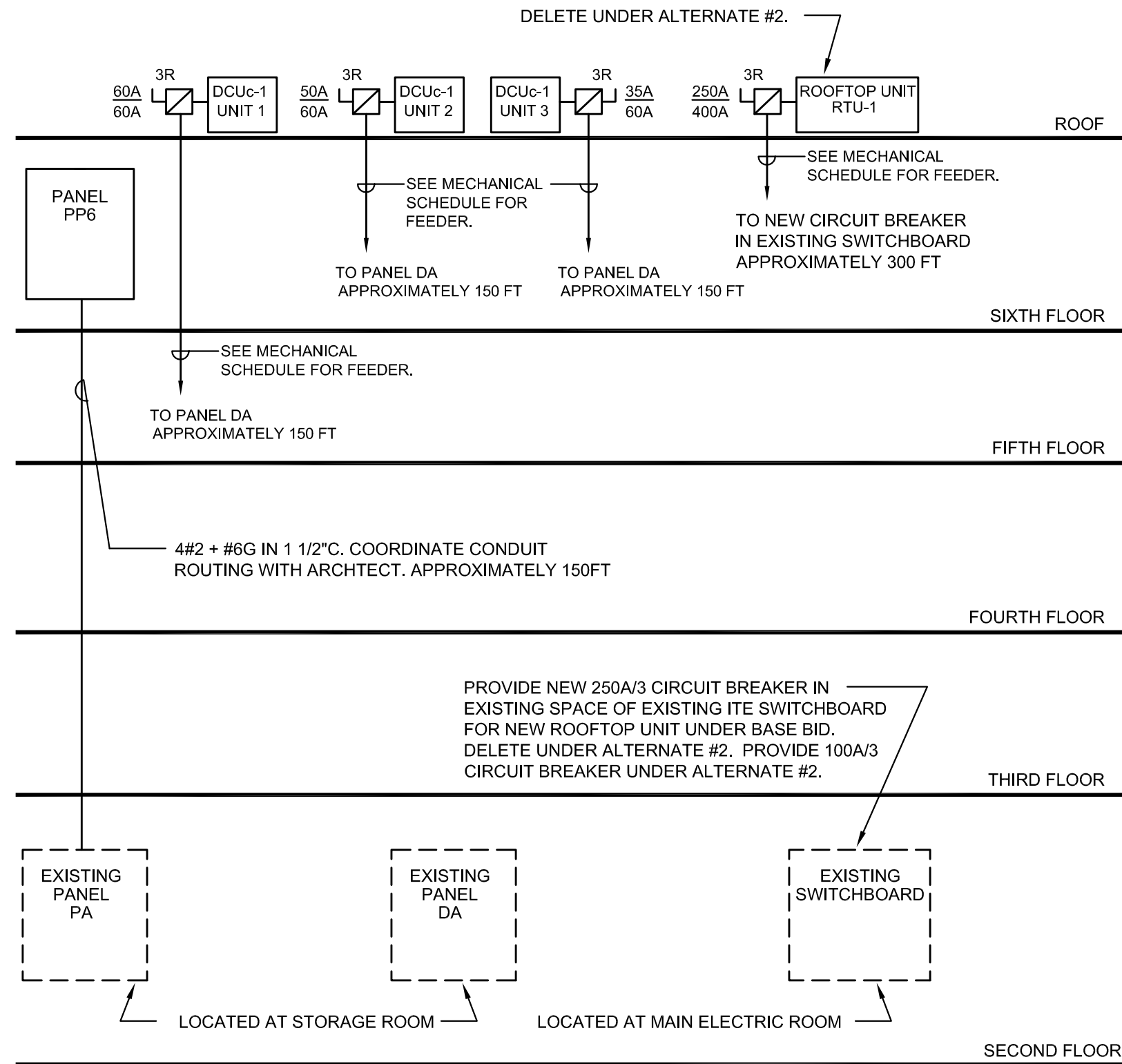
- EXISTING ITE PANEL. PROVIDE NEW CIRCUIT BREAKERS AS NOTED IN SCHEDULE.
- MATCH EXISTING BREAKERS.
- EXISTING 80A/3 CIRCUIT BREAKER FOR EXISTING ROOFTOP UNIT A2 TO BE REPLACED WITH NEW 100A/3 C.B. UNDER BASE BID.

SCHEDULE OF EXISTING MECHANICAL EQUIPMENT

UNIT NO.	DESCRIPTION	LOAD CHARACTERISTICS	VOLT	PH	PANEL CIRCUIT	CIRCUIT BREAKER	FEEDER	EQUIPMENT AND CONNECTIONS										REMARKS
								TS	XS	XS	XS	XS	XS	XS	XS	XS	XS	
DCUe-1	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-1,3	20A-2P	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-2	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-1,3	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-3	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-1,3	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-4	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-1,3	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-5	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-1,3	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-6	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-1,3	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-7	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-5,7	20A-2P	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-8	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-5,7	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-9	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-5,7	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-10	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-5,7	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-11	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-5,7	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-12	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-5,7	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-13	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-9,11	20A-2P	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-14	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-9,11	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-15	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-9,11	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-16	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-9,11	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-17	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-9,11	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-18	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-9,11	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-19	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-13,15	20A-2P	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-20	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-13,15	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-21	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-13,15	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-22	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-13,15	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-23	INTERIOR COOLING UNIT	70 WATTS	208	1	PP6-13,15	-	3#12&1#12G - 3/4"C			X	X							PROVIDE 4#12&1#12G-3/4"C TO DCUe-1
DCUe-1	EXTERIOR COOLING UNIT	24 TON	208	3	DA-7	60A-3P	4#6&1#10G - 1"C			X				X				
			208	3	DA-9	50A-3P	4#6&1#10G - 1"C			X							X	
			208	3	DA-10	40A-3P	4#8&1#10G - 3/4"C			X							X	
CP-1	CONDENSATE PUMP	-	120	1	-	20A-21	2#12&1#12G - 3/4"C	X				X						SEE DETAIL 3/E3.1
ACC-1	CONDENSING UNIT	12.5 TON	208	3	MSB-34,36,38	100A-3P	4#2&1#8G - 1 1/2"C			X	X	X	X				X	ADD UNDER ALTERNATE #2
RTU-1	ROOF TOP UNIT	40 TON	208	3	MSB-34,36,38	250A-3P	4#250MCM&1#4G - 3"C			X	X	X	X				X	DELETE UNDER ALTERNATE #2
EXISTING RTU	ROOF TOP UNIT	5 HP SUPPLY / 3 HP RETURN	208	3	EXISTING	EXISTING	EXISTING			X	X	(2) X					(2) X	ADD UNDER ALTERNATE #2

MECHANICAL SCHEDULE NOTES

- DUCT SMOKE DETECTORS SHALL BE PROVIDED ON SUPPLY DUCT FOR ALL MECHANICAL UNITS OVER 2000CFM. PROVIDE DUCT SMOKE ON RETURN AND SUPPLY DUCTWORK FOR ALL MECHANICAL UNITS OVER 15000 CFM. PROVIDE REMOTE TEST STATION WITH EACH DETECTOR. LOCATION OF TEST STATION SHALL BE ADJACENT TO THE FACP. DUCT SMOKE TO INITIATE ALARM.
- PROVIDE FLEXIBLE CONNECTION TO EQUIPMENT REFER TO SPECIFICATIONS
- FOR SINGLE MOTOR LOADS, REFER TO MOTOR BRANCH CIRCUIT SCHEDULES FOR CIRCUIT INFORMATION. FOR SINGLE POINT MIXED LOADS FOR SINGLE POINT MIXED LOADS OR NON-MOTOR LOADS REFER TO CIRCUIT SIZE SCHEDULE FOR CIRCUIT INFORMATION
- CONTROLLERS AND DISCONNECT DEVICES SHALL BE NRTL RATED FOR USE WITH A DESIGN E MOTOR. WITH A HORSE POWER RATING NOT LESS THAN 1.4 TIMES THE MOTOR HORSE POWER (REFER TO ELECTRICAL CODE ARTICLE 430)
- TWO SPEED MOTORS SHALL HAVE TWO MOTOR BRANCH CIRCUITS AND SIX POLE DISCONNECTS.
- WHERE INDICATED PROVIDE WEATHERPROOF DUPLEX RECEPTACLES AT MECHANICAL EQUIPMENT. PROVIDE 3/4"C. WITH #312AWG TO NEAREST PANEL AND CONNECT TO 20A., 1P. RECEPTACLE UNLESS OTHERWISE INDICATED
- ALL EXTERIOR MOUNTED DISCONNECT SWITCHES SHALL BE NEMA "3R."
- PROVIDE 3/4"CONDUIT W/PULL WIRE BETWEEN INDOOR UNIT & OUTDOOR UNIT FOR EACH SPLIT SYSTEM.
- PROVIDE HARD CONNECTION FOR CONDENSATE PUMP (CP). CONNECT TO NEAREST 120V, 1Ø BRANCH CIRCUIT UNLESS OTHERWISE INDICATED. PROVIDE THERMAL SWITCH AT UNIT. FIELD COORDINATE EXACT LOCATION WITH HVAC.
- SEE DETAIL 3/E3.1
- VFD FURNISHED INTEGRAL WITH UNIT BY HVAC EQUIPMENT SUPPLIER. SINGLE POINT CONNECTION BY E.C.
- EXISTING RTU SUPPLY AND RETURN FANS TO BE REPLACED WITH NEW SUPPLY AND RETURN FANS. MOTORS BY HVAC, WIRED BY E.C. SEE DETAIL 2/E2.1. VFD's BY E.C.
- E.C. SHALL F&I UNI-STRUT, FOR MOUNTING OF DISCONNECT SWITCH, ATTACHED TO ROOF STRUCTURE INDEPENDENT OF HVAC ROOF-TOP EQUIPMENT TO PREVENT EXCESSIVE WEAR DUE TO VIBRATIONS.
- CONNECT RECEPTACLE AND LIGHT FIXTURE TYPE "J" TO CIRCUIT PP6-41 WITH 2#12 & 1#12G-3/4"C.



2 POWER ONE LINE RISER DIAGRAM

E3.1 SCALE: N.T.S.

3 CONDENSATE PUMP WIRING DETAIL

E3.1 SCALE: N.T.S.

NOTE:

- WIRING MAY VARY BY MANUFACTURER. FIELD CONFIRM WITH APPROVED SHOP DRAWINGS PRIOR TO ROUGHING.



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REVISIONS

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DATE:

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TITLE:
PARTIAL FIRE ALARM
RISER, MECHANICAL
SCHEDULE AND ONE
LINE RISER DIAGRAM

JOB NUMBER:

12-15

DRAWN BY:

AD

CHECKED BY:

JR

DATE:

March 27, 2013

SCALE:

AS NOTED

SHEET NO:

E3.1